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ENVIRONMENTAL PROTECTION AGENCY

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PRIMARY NONFERROUS SMELTER ORDERS

Proposal of National Rules

[6560-01-M]

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 57]

[FRL 1000-5]

PRIMARY NONFERROUS SMELTER ORDERS

Proposal of National Rules

AGENCY: U.S. Environemntal Protection Agency.

ACTION: Proposed rules.

SUMMARY: The rules proposed today would establish the substantive requirements of initial primary nonferrous smelter orders (NSOs) issued under new section 119 of the Clean Air Act and the procedures to be used in issuing those NSOs. Under section 119, NSOs may be granted to eligible smelters by states, with EPA approval, or by EPA. Any smelter receiving an NSO is permitted to defer compliance with the sulfur dioxide emission limitation to which it is subject under an applicable state implementation plan (SIP). Initial NSOs may extend through January 1, 1983; second NSOs, extending through January 1, 1988, may also subsequently be granted, but are not covered by this proposal.

The NSO program that would be established by the proposed rules consists of several elements. First, the rules specify the criteria that the Administrator will use to decide whether a smelter is eligible for an NSO. Under the proposal, a smelter would be found eligible if the Administrator determined, based on the financial information submitted as part of the owner's application, that the smelter could not afford the equipment which would allow it to meet its SIP emission limit. Second, the rules provide for the establishment of certain interim requirements to ensure that the smelter's emissions will not result in violations of the national ambient air quality standards (NAAQS) for sulfur dioxide (SO_2). These requirements include the use of dispersion-dependent techniques (tall stacks and supplementary control systems), the evaluation and control of fugitive emissions, the assumption of legal liability by a smelter for violations of the NAAQS for sulfur dioxide in the areas affected by its emissions, and related monitoring and reporting requirements. The rules also limit the smelter's total sulfur dioxide emissions by requiring the efficient use of an interim level of continuous emission reduction technology, and establish procedures and criteria for a waiver of that requirement for any smelters now without such controls which would be forced to close by the imposition of the interim control requirement.

Smelters receiving NSOs would also be required to conduct or participate in research and development projects designed to develop improved means for meeting SIP requirements. Finally, the regulations would provide for the temporary suspension of SIP requirements during the processing of timely NSO applications.

DATES: Public comment is invited. Written public comments should be postmarked no later than April 1, 1979. Those who wish to make oral comments at the public hearings should, at least ten days before the hearing, contact Ms. Judith Larsen at (202) 755-2583.

Informal public hearings will be held on these proposed rules on March 6 and 7, 1979, in Tucson, Arizona; March 9, 1979, in Seattle, Washington; and on March 15, 1979, in Arlington, Virginia.

The record of each public hearing will be held open for thirty days following the completion of that hearing for submission of rebuttal and supplementary information. Interested persons are reminded that section 307(d)(7)(B) of the Act provides that objections to proposed rules must be raised with reasonable specificity by public comments for those objections to be cognizable during judicial review. In the view of EPA, this requires comments of a technical nature to be accompanied by sufficiently detailed supporting documentation to permit the Agency's technical staff to evaluate the comments in detail. This is particularly important where the information necessary to evaluate the comments properly is in the control of the commenters. Smelter owners and others are therefore encouraged to submit any detailed analyses of technical issues they believe may assist EPA is responding to their concerns.

ADDRESSES: Informal public hearings will be held at the following places:

Address and Date

First Floor Hearing Room, New Court Building, 111 West Congress Street, Tucson, Arizona—March 6 and 7.

Conference Room 12a, U.S. Environmental Protection, Agency, 1200 6th Avenue, Seattle, Washington—March 9.

Conference Room, Hospitality House, 200 Jefferson Davis Highway, Arlington, Virginia—March 15.

Written comments should be addressed to:

Director, Division of Stationary Source, Enforcement (EN-341), Attn: Ms. Judith Larsen, U.S. Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460.

The documents on which this proposal is based are contained in docket Number DSSE-78-1. All comments received during the comment period will be promptly added to the docket, and all documents upon which the final rules are based will be included in the docket. The docket will be open for public inspection between 8:00 a.m. and 4:00 p.m. Monday through Firday at:

U.S. Environmental Protection Agency, Central Docket Section, Room 2903B, Waterside Mall, 401 M St., SW., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT:

Ms. Judith Larsen, Division of Stationary Source Enforcement (EN-341), 401 M St., SW., Washington, D.C.20460, Telephone: 202-755-2583.

SUPPLEMENTARY INFORMATION: The remainder of this notice discusses the background of this rulemaking, and the basis, purpose, and contents of the regulations. The text of the proposed regulations follows this discussion.

I. Background

Under Title I of the Clean Air Act, EPA has set national ambient air quality standards (NAAQS) for certain pollutants ("criteria pollutants") including sulfur dioxide. Title I also requires the NAAQS to be met through the establishment of state implementation plans (SIPs) governing emission sources of these pollutants.

Emissions of sulfur dioxide by industrial sources generally fall into two categories: Stack emissions, and fugitive emissions. Fugitive emissions are generally defined as those released through leaks or at transfer points. Because stack emissions are responsible for the great majority of sulfur dioxide emissions, control efforts have traditionally been directed primarily at stack emissions.

The effects of stack emissions on ambient air quality can theoretically be mitigated in either of two ways: constant emission reduction, or dispersion techniques. Constant emission reduction techniques diminish the overall atmospheric loading of pollutants through the use of technologies or raw materials (including fuels) that prevent pollutants from being generated or that remove pollutants from waste gas on a continuous basis.

Dispersion techniques, on the other hand, do not reduce total emissions into the atmosphere on a continuous basis. Dispersion techniques consist of tall stacks, which disperse emissions over a wide geographic area, and of supplementary or intermittent control systems (SCS or ICS), by which emissions are varied (dispersed over time) depending on meteorological conditions. Neither technique necessarily reduces the emission of pollutants either in total or on a constant basis.

Fugitive emissions, in contrast to stack emissions, are emitted at low elevations and cause or contribute to ambient violations primarily in the immediate vicinity of the source. The primary means of controlling fugitive emissions are by preventing their escape (*e.g.*, by plugging leaks), and by capturing the emissions through hooding and comparable techniques and venting them up a stack.

A. CONTROL OF STACK EMISSIONS IN SIP'S

To assure the attainment and maintenance of the NAAQS, the Clean Air Act of 1970 directed the States to formulate implementation plans for the control of each criteria pollutant. States were to develop a combination of emission limitations and other measures, such that the total mix of emission limitations and other measures would result in the attainment and maintenance of standards. Section 110(a)(2)(B); *Train* v. *NRDC*, 421 U.S. 60 (1975).

If several sources in an area contribute to nonattainment of standards, a State may allocate the burdens of control among those sources, as it chooses, as long as the total reduction of emissions is sufficient to attain and maintain ambient standards. As part of the allocation decision, a State may, if it chooses, consider whether it is economically and technologically feasible for a particular source to comply with a given control requirement, such as an emission limitation in the case of industrial stack emissions. If a State determines that economic and/or technological infeasibility would prevent a source from complying with a proposed emission limitation, it may elect to impose a more stringent emission limitation or other control measure on another source and relax the emission limitation on the source for which compliance is believed infeasible, provided that the total mix of control requirements assures attainment of the NAAQS. If a single source's stack emissions are responsible for the entire emissions of a given pollutant in an area, a State must establish an emission limitation for the source that will result in attainment and maintenance of standards, regardless of the economic or technological feasibility of controls for the source. In such a case only that source's emissions are available for control, and there is no possible "mix" to lessen the burden on that source.

Once the emission limitations and other measures necessary to assure attainment and maintenance of standards are established by the State, compliance with those requirements is mandatory. Challenges to the emission limitations based on alleged technological or economic infeasibility are foreclosed if not successfully made at the State level. *Union Electric* v. *EPA*, 427 U.S. 246 (1976).

Two major questions have been raised in litigation concerning control of stack emissions: (1) What can an industrial source do if no existing technology can control its generation of pollutants or remove pollutants from its gas stream on a continuous basis, or if the technology or fuel exists but the source cannot afford it? (2) May dispersion techniques be used in lieu of constant controls to attain and maintain ambient standards?

1. *Technological and Economic Feasibility.* In early litigation, industrial sources claimed that EPA was required to determine if pollution control measures were technologically and economically feasible before approving or promulgating SIP provisions which required their use. These sources contended that Congress did not intend to compel or permit the imposition of requirements that could not be met because of technological or economic constraints. See, *e.g.*, *Buckeye Power, Inc.* v. *EPA*, 481 F.2d 162 (C.A. 6, 1973); *Appalachian Power Co.* v. *EPA*, 477 F.2d 495 (C.A. 4, 1973); *South Terminal Corp.* v. *EPA*, 504 F.2d 646 (C.A. 1, 1974); *NRDC* v. *EPA*, 507 F.2d 905 (C.A. 9, 1974).

The Supreme Court resolved this issue in *Union Electric* v. *EPA*, 427 U.S. 246 (1976). The Court held that in evaluating state implementation plans pursuant to section 110(a)(2), EPA was to determine only whether emission limitations and other measures in the plan would, if complied with, result in the attainment and maintenance of national ambient air quality standards. The Court recognized that failure to consider the technological or economic feasibility of emission limitations and other control measures could lead to the shutdown of certain sources. It concluded, however, that Congress had intended the requirements of SIPs to be technology-forcing, and had intended ambient standards to be attained through scheduled compliance with those requirements, regardless of their feasibility at the time they were established. As long as the plan provided for the standards to be achieved as expeditiously as practicable and in accordance with the other requirements of section 110(a)(2), the Court held that the Administrator must approve the plan, even if a source might have to curtail or terminate production as a result.

Thus, to the extent that control of emissions is necessary to attain the NAAQS, technological and economic feasibility cannot limit the degree of control required in the plan.

2. *Dispersion Techniques.* a. *The Stack Height Guideline.* In addition to the issue of technological and economic feasibility, much of the early litigation focused on the means of controlling stack emissions. A number of sources claimed that they should be permitted to meet standards through the use of tall stacks and other dispersion techniques in lieu of emission limitations requiring constant controls.

This litigation resulted in several opinions interpreting the 1970 Act and holding that Congress had intended that ambient standards be met through constant emission reduction, rather than dispersion techniques. *NRDC v. EPA*, 489 F.2d 390 (C.A. 5, 1974); *Big Rivers, et al. v. EPA*, 523 F.2d 16 (C.A. 6, 1975); *Kennecott Copper Corp. v. EPA (Kennecott I)*, 526 F.2d 1149 (C.A. 9, 1975); *Mision Industrial v. EPA*, 547 F. 2d 123 (C.A. 1, 1976). The cases indicated, however, that use of dispersion as a control technique was acceptable if constant control technology were shown to be unavailable.

EPA published its interpretation of these cases in the *Stack Height Increase Guideline*, 41 F.R. 7450, February 18, 1976. The Guideline defined situations in which sources could receive credit in SIPs for stack height increases. The effect of crediting increases was to reduce the degree of emission limitation required by these sources to attain and maintain ambient standards.

Under the *Guideline*, certain existing sources were permitted to use tall stacks to meet ambient standards for SIP purposes on either a temporary or a permanent basis. In general, the *Guideline* allowed "interim use" of a tall stack for control of stack emissions under section 110 for smelters and older power plants if they could demonstrate that installation of best available control technology (BACT) was economically unreasonable or technically inappropriate, and if they instead employed reasonably available control technology (RACT). While the *Guideline* required that the unreasonableness of applying BACT be demonstrated on a case-by-case basis, it did recognize the likelihood that BACT would be found economically unreasonable for many existing smelters.

The *Guideline* also provided for the determination of what constituted reasonably available control technology for a qualifying source, based on specified factors. For eligible smelters, RACT consisted of at least the control of "strong" gas streams (those rich in sulfur dioxide) through the use of sulfuric acid plants. Under the *Guideline*, this limited level of control was permissible only after a determination that additional control, including associated process changes, was not economically and technologically feasible. The RACT determination was also subject to re-evaluation whenever eco-

nomic or technological circumstances improved. The *Guideline* did not permit any source to operate wholly without constant controls, since EPA believed that to be precluded by the Act.

Under the interim program described by the *Guideline*, an isolated source such as a smelter was permitted to use a supplementary control system (SCS) in conjunction with RACT to meet ambient standards. An isolated source could use SCS only if it agreed to assume legal liability for any violations of the NAAQS in the area affected by its emissions (the "designated liability area" or "DLA"). The source's proposed SCS, which was used to curtail emissions when ambient air quality monitoring data and meteorological information indicated the possibility of NAAQS violations, was required to be enforceable and reliable for preventing such violations.[1]

b. *Congressional Action.* While Congress was aware of the *Stack Height Increase Guideline* when it enacted the Clean Air Act Amendments of 1977, that legislation embodies a somewhat different approach. Though similar in many respects to the *Guideline*, the Amendments reject a number of the policies described in the *Guideline*, and limit the use of dispersion techniques more narrowly than either the *Guideline* of the court decisions.

The new treatment of dispersion techniques is reflected in sections 110, 123 and 302 of the amended Act. Under section 110(a)(2)(B), a state implementation plan must include emission limitations and such other measures as are necessary to assure attainment and maintenance of standards. Section 302(k) defines an emission limitation as requiring continuous emission reduction technology. Under section 123, the degree of emission limitation (constant control) required of any source in a plan under section 110 may not be reduced to any extent by the unauthorized use of any "dispersion technique."[2] Taken together, in sharp contrast to the earlier *Guideline*, these sections wholly prohibit the use of unauthorized dispersion techniques in SIPs to meet ambient standards.[3] Consequently, such dispersion techniques cannot be included in a control strategy demonstration submitted as part of the SIP.

Congress did, however, permit limited and temporary use of dispersion techniques in two specific situations for purposes of attaining and maintaining ambient standards, but not as a means of complying with SIP emission limitations. First, administrative enforcement orders issued under section 113(d) may provide for the use of dispersion as an interim control measure if a source is unable to comply with an SIP requirement, the source is notified that it is subject to noncompliance penalties after July 1, 1979, and the source meets the other conditions of section 113(d). Second, section 119, under which these rules are proposed, permits the interim use of dispersion by a nonferrous smelter if it can demonstrate that it is eligible for a primary nonferrous smelter order (NSO).

Apart from the limited circumstances of sections 113(d) and 119, which defer compliance with SIP emission limitations but do not alter those requirements, and the narrow exceptions of section 123, dispersion techniques cannot be employed in lieu of constant controls for any purpose under the Act. Implementation plans submitted under section 110(a)(2) therefore must provide that the necessary degree of emission limitation be achieved solely by constant control measures. Under *Union Electric*, this requirement exists regardless of the technological or economic feasibility of such controls.

B. CONGRESSIONAL TREATMENT OF SULFUR DIOXIDE CONTROL AT SMELTERS

While the 1977 Amendments sharply restrict the permissible uses of dispersion in SIPs, they also grant special relief to the nonferrous metals industry. Section 119 of the Act establishes a new enforcement mechanism called a "primary nonferrous smelter order" (NSO), under which a smelter may temporarily defer compliance with its SIP sulfur dioxide emission limitation and instead meet ambient standards through the use of dispersion techniques.

The NSO program is similar to the program for smelters announced in the *Stack Height Guideline*, with certain important differences. As was the case under the *Guideline*, a smelter is eligible for the program if it cannot afford the control equipment (and associated process changes, where relevant) necessary to comply with its SIP emission limitation. Eligibility is to be determined on a case-by-case basis by the Administrator. Unlike the *Guideline*, section 119 specifies a definite date by which a smelter must comply with the SIP requirements: January 1, 1983, unless the smelter receives a second NSO, in which case the latest possible compliance date is January 1, 1988.

Section 119 also requires the use of certain interim control measures that are essentially the same as under the *Guideline*. Dispersion may be used to meet ambient standards, together with interim constant controls to reduce total sulfur dioxide emissions into the atmosphere. With respect to constant controls, the statute makes mandatory what had been EPA policy under the *Guideline*: Smelters which already treat their strong sulfur dioxide gas streams with sulfuric acid plants (or other constant control systems), and which use dispersion to meet ambient standards, cannot be required to install additional constant control systems, such as scrubbers, during the term of the first NSO unless EPA determines that such additional constant control systems are adequately demonstrated to be reasonably available. Unlike prior policy under the *Guideline*, however, a smelter which has no constant controls may receive a waiver of the interim constant control requirement if the cost of installing such controls would necessitate closure of the smelter. Section 119 also retains the requirement that a smelter conduct or participate in a research program to develop improved means of meeting its SIP emission limitation.

The requirements for the use of supplementary controls under section 119 are also similar to those imposed under the *Guideline*. The systems must be reliable and enforceable, and smelters will be required to assume legal liability for violations of NAAQS for sulfur dioxide in designated liability area (DLAs).

Finally, NSOs under section 119 will require the control of fugitive emissions of sulfur dioxide, where necessary. The fugitive emission control measures that may be required are part of the interim measures necessary to prevent violations of the NAAQS during the term of NSOs; fugitive emission control requirements were also imposed in SIPs containing the earlier program under the *Guideline*, although they were not discussed in the *Guideline*.

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[1] The use of a tall stack and RACT by smelters was also conditioned on the conduct of a research program to develop improved means of meeting the SIP emission limitation. This requirement was upheld by the U.S. Court of Appeals for the Ninth Circuit in *Kennecott I*, cited above.

[2] Section 123 defines dispersion technique as a stack height which exceeds good engineering practice or any intermittent or supplemental control of air pollutants varying with atmospheric conditions. Regulations implementing section 123 were proposed by EPA on January 12, 1979, at 44 FR 2608.

[3] Section 123 does authorize sources currently using dispersion techniques to receive full credit for their dispersive effects in determining the required degree of SIP emission limitation, if the stack height was in existence or the dispersion technique implemented prior to the passage of the Clean Air Act of 1970. With one minor exception, only sources which qualify for this credit or whose stacks do not exceed good engineering practice stack height may have the effect of the dispersion technique considered in establishing the degree of emission limitations required in the applicable SIP.

II. Contents of the Regulations

A. Development

Immediately following the enactment of section 119 on August 7, 1977 as part of the Clean Air Act Amendments of 1977, EPA began to draft provisions to implement the section. In February, 1978, the Agency circulated a preliminary version of those provisions in the form of draft guidance to state agencies and EPA regional offices. EPA solicited comments on the draft guidance from interested parties. Comments were received from three state agencies, seven companies operating primary nonferrous smelters, and two environmental public interest groups. In addition, EPA staff members met with representatives of five companies to discuss their comments and to improve EPA's understanding of the technical problems involved. Several of the companies subsequently supplied data relating to these issues.

EPA has considered the comments and information received in response to the draft guidance. As a result, significant alterations have been made in today's proposal, including a decision to propose the provisions as regulations. EPA remains very interested in receiving more such information in response to this proposal. All comments received will be considered in the promulgation of the final regulations.

B. Format and Scope

The proposed regulations would comprise a new Part 57 of Title 40 of the Code of Federal Regulations. Subparts A through H, proposed today, would contain provisions governing the eligibility of smelters for initial NSOs, the procedures through which NSOs may be issued by EPA or the states, and the required contents of each NSO.

Instead of imposing highly specific requirements, many of the provisions are framed in general terms to permit flexible responses to the particular conditions at each smelter. EPA believes this approach accommodates differences in conditions at the various smelters and increases the opportunity for the use of expertise developed by the state agencies currently regulating these smelters and of further information developed by EPA. These regulations will govern EPA in formulating NSOs for individual smelters and in determining whether NSOs issued by state agencies are approvable under section 119.

EPA has received inquiries from operators of certain molybdenum smelters about the applicability of section 119 to their facilities. Although the proposed regulations specifically address only copper, lead and zinc smelters, the Administrator has not yet determined whether or not Congress intended section 119 to be confined to those facilities. EPA solicits comments on this question, and on what specific changes should be made in the proposed regulations to accommodate other kinds of smelters.

The proposed regulations also contain provisions for issuing NSOs to those few smelters which were subject to the interim SIP provisions described in the *Guideline* and discussed above. Under the proposed regulations, certain interim SIP provisions may be incorporated into an NSO, even if they do not conform precisely to the corresponding provisions otherwise required by the Part 57 regulations. This provision is designed to facilitate transition from SIP requirements already in effect to corresponding NSO requirements without disrupting ongoing compliance with the substance of those requirements, and without penalizing good faith efforts to comply with those requirements. Reliance upon existing SIP provisions would be found by the Administrator where the provisions had been promulgated before the smelter owner's NSO application, where the smelter was in substantial compliance with the required increments of progress. The only SIP requirements covered by this proposed provision would be those which were substantially equivalent to the corresponding NSO provisions otherwise required by Part 57.

The Administrator believes this provision is authorized by section 406 of Pub. L. 95-95, which preserved the effectiveness of existing SIP requirements until modified by EPA, and by sections 119 and 301 of the Clean Air Act. The Administrator also believes the provision is an appropriate exercise of his discretion, in the absence of any specific legislative guidance as to the means of effecting the transition from SIPs to NSOs for the few affected smelters. EPA solicits comment on these provisions.

C. Substance of the Regulations

1. *Subpart B: The Application.* The provisions of Subpart B establish NSO application procedures and specify the information the smelter owner must provide. Time limitations are placed on various steps in the process to assure prompt issuance of NSOs and to comply with the requirements of section 119.

The application for an NSO would be initiated by a letter of intent submitted by the smelter owner to the state or to EPA, at the owner's election. If a letter of intent is submitted within two weeks after the effective date of these regulations (or of SIP emission limitations promulgated subsequently, as applicable), the smelter would not be required to comply with its SIP sulfur dioxide emission limitation during the time needed to formulate a complete application. This suspension of the emission limitation would also continue for the period necessary to complete action on a timely application. EPA believes that this is consistent with the general intent of Congress that smelters have an opportunity to apply for NSOs as an alternative to compliance with their SIP emission limitations. The limitations on the duration of the suspensions are designed to limit the time during which no enforceable control measures are in effect to the minimum necessary.

Two kinds of information must be submitted as part of the application: Technical and financial. The technical information is primarily that operating information necessary for the state or EPA to formulate the interim measures required by section 119. The financial information, which is to be submitted directly to EPA headquarters by all applicants, is specified in Appendix A to the proposed regulations. The financial information specified in Appendix A will be used to determine, as required by section 119(b)(3), whether the smelter can afford the technology necessary for it to meet its SIP emission limit.

This detailed information is necessary to enable EPA to apply uniform economic criteria to all smelters and to accurately determine the position of an individual smelter in its overall corporate structure. This financial information, which is being required under sections 119 and 114 of the Act, will be subject to confidential treatment as provided by 40 CFR Part 2.

Using this financial information, the Administrator will determine whether the smelter involved can afford the technology needed to comply with its SIP emission limit. The Administrator has tentatively determined that the following technology is adequately demonstrated for the primary nonferrous smelter industry: (a) The acid plant and associated process technology underlying EPA's new source performance standards for copper, lead, and zinc smelters (40 CFR Part 60, Subparts P, Q, and R); and (b) magnesium oxide sulfur dioxide concentration, limestone scrubbing, and the Cominco ammonia scrubbing system. The Administrator is also considering designating the Flakt-Bolliden sodium citrate concentration system as adequately demonstrated. The Administrator's judgments regarding the scrubbing and concentration systems listed here are primarily based on the actual use of the systems at copper, lead, and zinc smelters in various parts of the world, including Canada, Europe, and Japan. The rulemaking docket contains technical support for

the determinations, and EPA solicits comments on the determinations and supporting material.

In applying for an NSO, a smelter owner will be required to show that under the financial test specified in Appendix A, it cannot afford the use of any of the systems listed above which are applicable to the smelter and which would allow it to comply with its SIP emission limit.

In comments on the draft guidance, a great deal of attention was devoted to the principal economic test suggested for determining whether a smelter can afford to meet its SIP emission limit. That test would have been used to determine eligibility both for an NSO and for a waiver of the interim constant control requirement (on the grounds that permanent closure would result from the imposition of that requirement). A smelter would have been found eligible under the test if, under projected costs, revenues, and operating conditions, the sum of the present value of its future net cash flow (after making the pollution control expenditure) and its terminal value was less than the current salvage value of the smelter.

The effect of this "opportunity cost" test is to simulate the response of a prudent operator to the requirement that the pollution control equipment be installed. If the smelter owner could realize a greater net return on its capital by making the incremental investment elsewhere, a prudent owner using accepted financial principles of decision would choose that alternative investment over the expenditure necessary to continue operating the smelter. Under these circumstances, the cost of the pollution control would be deemed greater than the smelter could afford, and the smelter found eligible.

The Agency initially adopted this test because it believed section 119 was intended to avoid the widespread plant closures that certain members of the industry argued would occur if they were forced to comply with the full constant control requirements of the Act. The industry contended, however, that the test afforded less relief than Congress intended. Some members of the industry also argued that Congress intended that an NSO be granted to any smelter unable to meet its SIP emission limitation simply through the use of existing acid plants, even if the smelter could afford the controls necessary to meet its SIP emission limitation.

The Administrator believes that section 119(b)(3) requires him to determine whether an applicant smelter owner can afford the technology which would enable the smelter to meet its SIP emission limit. While the administrator has stated in the past and continues to believe that such expenditures may prove to be beyond the means of a large portion of the smelting industry at this time, he also believes that the statute requires him to determine what technology is adequately demonstrated to be reasonably available to each applicant smelter on the basis of its own financial position. The Administrator does not believe that an industry-wide determination would be consistent with the intent of Congress, particularly in light of the widely varying financial positions and air quality circumstances of the various nonferrous smelters in the industry.

The Administrator has concluded, however, that the financial test originally suggested may not have provided adequate assurance that all those smelters which Congress would have deemed unable to afford the necessary additional sulfur dioxide control expenditures would be found eligible for NSOs. The opportunity cost test has therefore been modified to provide that assurance.

The eligibility test proposed today, a "net income test," is similar to the opportunity cost test in that it is based on a cash flow analysis, a standard tool of financial analysis. The significant difference is that the net income test permits the smelter to deduct depreciation on its productive assets from its future net cash flow before determining whether it can afford the pollution control expenditure. This in effect reserves an additional portion of the smelter's income for its discretionary use, beyond those future expenditures already taken into account in performing the cash flow analysis.

The Administrator believes that this test fairly implements the intent of Congress that smelters unable to afford the equipment necessary to comply with SIP emission limits be eligible for NSOs, while identifying those facilities on a case-by-case factual basis.

The proposed test is to be applied by an applicant to the smelter's projected position over the period 1979–1985, inclusive. This period was chosen as representative of the smelter's financial position after the installation of controls. In making the projections, the applicant may take into account all reasonably foreseeable expenditures, including other environmental and occupational pollution control costs. Specific assumptions as to what controls will be required are supplied in Appendix A. These assumptions are based on existing requirements and the Agency's best estimates of future requirements. Projected indices for various relevant economic factors, including metals prices, will be supplied by EPA. These factors are identified in Appendix A, and the indices and their bases are available in the rulemaking docket.

Finally, Subpart B requires smelter operators to submit, as part of their applications, draft NSO provisions that comply with the requirements of the regulations. These drafts may be used by the issuing agencies in fashioning NSO provisions.

2. *Subpart C: Constant Control and Related Requirements.* Section 119(d)(1) requires the use of certain interim measures by a smelter during the pendency of an NSO. One measure specifically required is the use of continuous emission reduction technology. Under section 119(d)(4), a smelter which already uses some constant control technology and a supplementary control system cannot be required to use additional constant control systems during its first NSO unless the Administrator determines that they are adequately demonstrated to be reasonably available. The smelter's existing control systems, however, must be well designed, operated, and maintained, and must fully treat the "strong streams" produced by the smelter's process equipment.

The interim constant control requirement is implemented through Subpart C of the proposed regulations. The primary requirement is that the smelter operate its constant controls at their maximum feasible efficiency, that the process and control equipment be maintained in the way best designed to ensure such operation, and that process operations by scheduled and coordinated to facilitate treatment of process gas streams to the maximum extent possible.

a. *Interim Emission Limitations.* Each NSO must also implement the maximum feasible efficiency requirement through a limitation on the concentration of sulfur dioxide in the effluent or tail gas emitted by the control system over a specified averaging period.

Many of the comments on the draft guidance focused on the level at which the concentration limit would be set and the averaging or measuring period over which compliance with that limit would be calculated. The thrust of those comments was that smelter acid plants are highly idiosyncratic, that their efficiencies and performance vary widely both among acid plants and at any given plant from time to time, principally as a function of original plant design and of fluctuation in the concentration and volume of process gases reaching the acid plants, and that the method of setting performance levels suggested in the draft guidance did not adequately account for these factors. The result, according to many of the comments, would have been significant expenditures for acid

plant upgrading, or significant production curtailments, or both.

EPA has considered these comments and the available data in formulating the proposed regulations. The proposed requirements, in the Agency's judgment, now fully account for the problems in attaching enforceable numerical standards to smelter acid plant performance. Specifically, the required concentration limits and averaging periods are to take into account, on a case-by-case basis, both acid plant design and fluctuations in the strength and volume of process off-gases. The regulations would also permit the smelter operator to demonstrate the need for a different averaging period.

The maximum feasible efficiency provision will not require general upgrading of acid plants as a matter of course, but only the correction of serious design or operating deficiencies in control systems. Significant upgrading of control equipment which was properly designed to continuously process the gas it actually receives, and which is properly operated and maintained, should not be necessary. Serious deficiencies are those resulting in significant decreases in the overall efficiency or availability of the control system. A primary example of a serious acid plant deficiency is the use of heat exchangers and associated equipment inadequate to sustain efficient, autothermal operation over the range of gas strengths and volumes routinely generated by the smelter's process equipment. This and other conditions which result in unduly low efficiency or frequent bypassing of the control equipment are not consistent with the requirement of section 119 that NSOs provide for the use of properly designed technology to continuously reduce emissions.

The regulations would also require each NSO to contain a total plant-wide emission limitation governing the total sulfur dioxide emissions from the smelter's stacks. This limit would be calculated at a level which would permit the smelter to operate at its full production capacity, assuming that its control system is operated at the prescribed performance level. The purpose of the plant-wide limit is to prevent the use of dispersion as a substitute for constant control of emissions resulting from capacity expansions. Because the plant-wide limit is calculated at actual capacity, it will not require any production curtailment.

Compliance with the control system performance requirement is to be determined through continuous monitoring. Continuous monitoring, as well as the use of relatively short-term averaging periods, is necessary to ensure the proper operation and maintenance of control equipment (and related process equipment) on a continuous basis.

Compliance with the plant-wide emission limit is not required to be determined on a short-term basis, since the limit is not designed primarily as a check on short-term conditions. For the same reason, the regulations do not require the use of continuous stack monitors to determine compliance with this limit.

b. *Excess Emissions.* The provisions of Subpart C also govern the conditions under which emissions in excess of an interim emission limit or the bypassing of a control system consititute violations of an NSO. These provisions require the reporting of all excess emissions, but do not treat those which the smelter operator is able to demonstrate as resulting from genuine malfunctions, and as to which the operator took appropriate remedial action, as violations of the NSO. This exemption is consistent with the recent decision of the Ninth Circuit Court of Appeals in *Marathon Oil Co. v. EPA*, 564 F.2d 1253 (1977).

In general, any sudden and unavoidable breakdown in process or control equipment is considered a malfunction and not a violation of the NSO. The definition of malfunction (which appears in Subpart A) is intended to account for all genuine, unforeseeable equipment problems which result in excess emissions from the control system. The definition also expressly recognizes that an unavoidable problem can appear suddenly, but be most appropriately repaired a number of days later. Control or process equipment startups and shut-downs resulting from malfunctions are also covered by the exemption. The malfunction provisions are, however, designed to promote improved operation and maintenance procedures by refusing to exempt as malfunctions those breakdowns that could have been foreseen and avoided by the use of such procedures.

The malfunction exemption does not apply where the malfunction results from a serious design deficiency which the smelter owner has failed to correct as required under the NSO. This means, for example, that where an acid plant at a lead smelter is inadequately designed to routinely handle relatively frequent shut-downs of the sintering machine, the acid plant must be upgraded as required to correct that serious deficiency. Excess acid plant emissions that could be prevented by the required upgrading would therefore not be considered the result of sintering machine malfunctions.

The proposed regulations also treat as violations of the NSO any excess emissions occurring during bypassing of control equipment, unless the bypassing is necessitated by a malfunction. Except as discussed below, the provisions therefore effectively prohibit bypassing during periods when the acid plant is shut down for scheduled maintenance, and when more process off-gas is reaching the plant than it is designed to handle.

The corresponding provisions in the draft guidance were the subject of considerable comment. A number or companies argued that it was unreasonable to require the smelter to shut down during scheduled maintenance, with the resulting production loss, simply because its control equipment was unavailable, in view of the fact that ambient standards are to be protected through the use of SCS anyway.

The Administrator disagrees. First, scheduled maintenance, for the purposes of NSOs, is only that maintenance which needs to be performed on a routine basis, on a reasonably periodic or predictable schedule. The best example of scheduled maintenance is screening of catalyst in an acid plant converter. Maintenance necessitated by the detection of an actual, impending, or developing (unforeseeable) equipment failure will usually be treated as malfunction-related, rather than scheduled. The malfunction provisions thus encompass many of the circumstances which the companies identified as shut-downs for scheduled maintenance. Indeed, data submitted by Asarco, Inc. in support of its argument indicate that ony 1.58 percent of the total (1977) copper production at its Hayden, Arizona smelter would have been "lost" if the smelter had been shut down during what, under these provisions, would be regarded as scheduled maintenance.

Moreover, many smelters already schedule periodic shut-downs for maintenance purposes. The Agency believes that careful scheduling of acid plant maintenance cycles would allow a substantial part of that maintenance to be performed during these previously scheduled smelter shut-downs. Furthermore, knowledge that the smelter is scheduled to be shut down for maintenance allows the operator to plan in advance for its projected inventory needs during the shut-down. This advance planning results not in loss of production, but simply in its rescheduling. The administrator also notes that the use of SCS, which the operators seek, also entails production rescheduling, and has apparently proved feasible.

Second, the Administrator believes that permitting planned operation under NSOs without the use of any constant controls during periods of scheduled maintenance is inconsistent with the requirements of section 119 and the intent of Congress. In requir-

ing the use of an interim level of constant controls, Congress has implicitly placed control equipment on a par with production equipment: each is integral to the operation of the facility. Just as a smelter cannot operate without its production equipment, and schedules, a shut-down for the periodic maintenance of that equipment, the smelter likewise cannot operate without another integral system, its continuous emission reduction equipment. In short, to permit regular, scheduled periods of uncontrolled emissions is not consistent with the requirement for operation with *continuous* controls.

The fact that SCS will be the primary means of protecting ambient standards under an NSO does not alter this conclusion. In requiring the interim use of constant controls, Congress intended to limit the total amount of sulfur dioxide emitted into the atmosphere and transported beyond the immediate vicinity of the smelter. Indeed, this goal led the Administrator to consider the possible need to also ban bypassing during malfunctions, except where injury to people or serious property damage might otherwise result. While that approach was considered, the Agency has concluded that in light of the unpredictable nature of malfunctions, and of the much larger possible production rescheduling or loss associated with requiring shut-downs during repairs of malfunctions, such a requirement is not compelled by the interim constant control requirement of section 119.

Because bypassing during scheduled maintenance would greatly increase the total volume of sulfur dioxide emitted by a smelter permitting such bypassing is incompatible with the goal of limiting overall emissions to the level associated with the operation of interim constant controls at maximum feasible efficiency. In order to provide the maximum flexibility consistent with this goal, however, the proposed regulations would allow bypassing during scheduled maintenance to the extent that additional controls, installed at a smelter under the research and development provisions of its NSO, remove an equivalent amount of sulfur dioxide from the smelter's emissions. Specifically, the new controls would be required to offset on a net (annual) basis the sulfur dioxide emissions occurring during bypassing for scheduled maintenance during that (annual) period. The provision would allow such bypasing throughout the term of the NSO, but would treat emissions occurring before the new controls began operating as violations of the NSO if the new controls failed to operate with the approximate effectiveness originally represented in the NSO application.

The Administrator also believes that permitting bypassing during periods when a control system is receiving more process off-gas than it is designed to handle ("excess gas") is inappropriate, in light of both the Congressional intent underlying section 119 and the consequences of prohibiting such bypassing. In enacting the interim constant control requirement of section 119(d)(1), Congress clearly intended that, as a minimum, all "strong" streams be treated by those controls. Bypassing strong streams around control equipment (in the absence of a malfunction), however, in effect exempts a portion of those streams from the interim constant control requirement.

Moreover, the information available to the Agency does not indicate that a large amount of production curtailment would result from this prohibition. Most smelters, in fact, employ control equipment adequate to handle the gas volume actually generated under current operating procedures, and achieve satisfactory production results under those conditions. Even for those few smelters where current operating procedures result in the generation of excess process gas, this prohibition is not expected to entail large production losses. Information submitted by Asarco, for example, indicates that excess gas bypassing was used for only about one percent of the 1977 production at its Hayden smelter. This percentage could be further reduced, EPA believes, by improved scheduling of operations and, in some cases, by improved maintenance to minimize inleakage of air into the ducts carrying the process gas to the acid plant (thus both reducing total gas volume and improving acid plant performance by preventing dilution). Finally, any smelter in this situation also has the option of upgrading its control equipment to handle the gas actually generated by the process equipment at the smelter.

3. *Subpart D: Supplementary Control System Requirements.* Section 119 permits smelters receiving NSOs to meet ambient standards through the use of dispersion as an interim alternative to the full use of constant controls required by their SIP emission limitations. The pre-eminent requirement for the use of dispersion under section 119 is that the system chosen be enforceable, reliable, and adequate to ensure that the smelter's emissions do not result in violations of the NAAQS in the area affected by those emissions. The statute contains a broad grant of discretion to the Administrator to require that NSOs contain whatever interim measures are necessary to achieve these goals.

Subpart D implements this Congressional directive by requiring that each smelter prevent all violations of NAAQS in the area affected by its emissions (its "designated liability area" or "DLA") through the use of an approved supplementary control system (SCS). The proposed regulations specify the elements necessary for an approvable SCS, but, as a result of comments by state agencies and the industry, provide more flexibility to the issuing agencies in determining the adequacy of a particular system than did the draft guidance. The State of Arizona, for example, has had considerable experience in regulating the use of SCS by smelters, and the proposed regulations are designed to permit the full use of the expertise available in the air pollution control agencies of such states. The regulations are also intended to permit the smelter operators, who have the most actual knowledge of and experience in the use of these systems, to participate fully in the formulation of SCS operating requirements for their smelters.

a. *Ambient and Meteorological Data.* Under the proposed regulations, each SCS would be required to contain several elements. First, the system would have to be able to continuously monitor ambient air quality at all points of expected high concentrations of sulfur dioxide. The siting of monitors would be based on factors specified in the regulations. Based in part on the experience of Arizona, at least seven fixed monitors and one mobile monitor would ordinarily be required.

Each SCS must also be able to predict meteorological conditions which are likely to result in high ambient concentrations of sulfur dioxide, rather than simply relying on monitors to warn of those concentrations as they actually occur. This kind of "open-loop" operation is necessary, in the Administrator's opinion, to give the advance warning necessary to ensure that emission curtailments will be effected in time to prevent violations of ambient standards. Because emission curtailment take some time to complete, and take additional time before their effects on ambient air quality are fully felt, reliance on ambient monitors alone ("closed-loop" operation) would not always provide adequate lead time.

The nature and precision of the specific meteorological capability required to assure adequate lead time will, however, depend largely on site-specific factors, and in some cases National Weather Service information alone may be adequate. The Administrator has therefore decided not to specify in detail in advance the required components of the predictive element of supplementary control systems; likewise, the number and qualifications of the personnel receiving and

interpreting meteorological information has not been specified. Both, however, must be adequate for fully reliable open-loop operation.

b. *Curtailment Criteria and Operating Manual.* Advance specification of when, how, and by how much emissions will be curtailed to avoid violations of the NAAQS is essential to a successful SCS. The regulations require that curtailment criteria, procedures, and plans be stated in an SCS operating manual, and make the failure to curtail emissions as called for in the manual a violation of the NSO.

A number of smelter operators commented that adherence to curtailment procedures and criteria specified in a manual was impractical, since in their view all the combinations of air quality and meteorology that might arise could not be listed. A number of operators also argued that requiring adherence to the manual left inadequate scope for the exercise of judgment by the SCS operating personnel.

The Administrator believes that neither of these problems is likely to arise under the proposed regulations. The principal variable affecting the need for curtailment is meteorology, both current and predicted. The Agency recognizes that it is not possible to list in advance all of the specific characteristics of each meteorological regime that may occur in the vicinity of a given smelter, and does not intend that the SCS manuals do so. What is intended is that the manuals contain the criteria to be used in evaluating specific meteorological information, including the thresholds, ranges, and combinations of meteorological values which will trigger curtailments.

EPA also recognizes that prediction of incipient meteorological conditions requires the exercise of judgment, and does not intend to preclude reliance on competent and qualified personnel to evaluate the significance of meteorological information as it is acquired. The Agency does intend, however, that this judgment be constrained by a requirement to prevent all violations of ambient standards, and that the procedures contained in the manual be designed accordingly. The regulations therefore would make the failure to curtail emissions when and to the extent indicated by the criteria in the manual, applied to actual conditions, a violation of the NSO. The proposed regulations provide, however, for modification of the manual in light of actual experience. Failure to adhere to certain other procedures in the manual, such as schedules for calibration and maintenance of SCS equipment, would also constitute a violation of the NSO.

c. *Designated Liability Areas; Overlapping DLAs.* The curtailment criteria and SCS manual are required to account for all conditions which could result in violations of NAAQS in the smelter's designated liability area (DLA). The DLA is that area within which the smelter's uncontrolled emissions at maximum production rates may cause or contribute to violations of NAAQS for sulfur dioxide under any probable meteorological conditions. The proposed regulations provide presumptive boundaries for DLAs, depending on the smelter's rate of emissions. The boundaries in the table, which are based on general modelling performed by EPA, may be replaced by any boundaries a smelter owner can demonstrate to include the area affected by the smelter's emissions under all probable meteorological conditions.

As a condition of receiving an NSO, the smelter owner would also be required to consent to legal liability for all violations of the NAAQS for sulfur dioxide within the smelter's DLA. The Administrator believes that SCS can be a reliable and enforceable means of preventing violations of ambient standards only if the smelter operator is clearly responsible for all violations of ambient standards in the areas affected by the smelter's emissions. This approach, which was anticipated by Congress, has been endorsed by the Ninth Circuit Court of Appeals in *Bunker Hill Co. v. EPA*, 572 F.2d 1286 (1977).

A major assumption underlying the use of SCS by a given source is that periodic emission reductions by that source will have sufficient impact on ambient air quality to protect the NAAQS. SCS can therefore ordinarily be permitted only when the source is the primary emitter of sulfur dioxide in the area. Otherwise, there can be no assurance that a particular emission curtailment by the source will be adequate to avoid violations of the standards.

In comments on the draft guidance, a number of companies pointed out that other sources of sulfur dioxide would be located within the designated liability areas of some smelters, and that in some instances the DLAs of two or more smelters might overlap. These companies argued that it would be unfair to make a smelter liable for a violation not caused by its own failure to curtail emissions as called for by its SCS manual. While the Agency recognizes the validity of these comments, it also believes that if the SCS–DLA mechanism is to provide an enforceable and reliable means of preventing violations of the NAAQS, a strong presumption of liability must attach whenever a violation occurs in a smelter's DLA.

The proposed regulations, however, accomodate the companies' concerns to the extent feasible. First, a smelter's curtailment decisions would have to take into account the "permissible emissions" of any other sulfur dioxide sources with the DLA (other than other smelters subject to NSOs, which are treated separately). The "permissible emissions" of other sources would be those allowed under the applicable Clean Air Act emission standard. The regulations would also permit a smelter operator to rebut the presumption of liability for a particular violation of ambient standards in its DLA by showing that the violation was caused by emissions of another source in excess of that source's permissible emissions level. The burden of this showing would be entirely on the smelter.

The regulations also deal with the difficult problem of overlapping DLAs of smelters under NSOs. Smelters with overlapping DLAs would be required to submit joint plans for emission curtailment adequate to ensure that standards will not be violated as a result of their combined emissions. These smelters could, but would not have to, operate a joint SCS. The joint submission would also have to include provisons conclusively allocating liability in the event of a violation in the area of overlap. Any smelter under an NSO would also be required to revise its SCS and submit a joint plan with any other smelter that subsequently applies for an NSO and that would have an overlapping DLA. These measures are consistent with the Congressional intent that NSOs not necessarily be granted simply on a first come, first served basis, and that NSOs take into account the effect of all significant sulfur dioxide sources in an area. The Administrator also regards the provisions governing DLAs having more than one sulfur dioxide source as necessary to make SCS and other NSO interim measures reliable and enforceable.

d. *SCS Development Plan.* The proposed regualtions require each smelter to include in its NSO application a description of its existing SCS (if any) and a specific plan and timetable for developing an approved system. The NSO would require the smelter to operate any existing SCS and to immediately assume liability for violations at existing monitoring sites. It would also incorporate an approved version of the SCS development plan. Once the smelter has completed and demonstrated the reliability of its full system, the NSO would be amended to include the relevant characteristics of the system. The NSO could also be amemded at any time to incorporate improved operating procedures, change in the SCS manual, or other system requirements.

e. *Reporting, Recordkeeping, and Monitoring.* Finally, the proposed regulations would establish certain re-

porting and recordkeeping requirements in connection with the SCS operations, and would require the installation and operation of continuous sulfur dioxide monitors on a smelter's main stack. The primary purpose of the continuous monitoring requirement is to facilitate the development of improved SCS curtailment criteria by using specific quantitative emission data to construct more accurate models of the effect of the smelter's emissions.

While the Agency is aware that some companies do not believe that the equipment now available for the continuous monitoring of stack gas volumetric flow rate is reliable enough for purposes of compliance determinations, the usefulness of the information for modelling purposes would remain substantial even if periodic problems do initially occur. Moreover, the increased use of these monitors should result in improvements in their performance as additional experience is gained by smelter operators and equipment vendors.

4. *Subpart E: Fugitive Emission Control Requirements.* The use of supplementary controls to prevent violations of ambient standards can be successful only if SCS emission curtailments, which at most smelters involve only stack emissions, reduce ambient concentrations at all necessary points in a smelter's DLA. At many smelters, however, fugitive emissions, which escape into the air at low elevations from various points in the smelting process, can cause violations of ambient standards by themselves or in combination with stack emissions. Because the primary impact of fugitive emissions is usually closer to the smelter than that of stack emissions, the use of an SCS designed to control stack emissions often fails to prevent violations of ambient standards due to fugitive emissions.

Subpart E requires the use of interim measures to deal with this problem. Unlike the draft guidance, these provisions do not necessarily require the immediate installation of equipment to prevent the escape of fugitive emissions and to capture and vent them when they do escape from process points. In discussions and comments on the draft guidance, several companies stated that certain smelters control their fugitive emissions, adequately by designing their SCS to curtail emissions when necessary to prevent violations due to fugitive emissions, or through a combination of SCS and engineering measures.

The Administrator remains doubtful that SCS can be reliably used to curtail fugitive emissions, because their diverse emission points make it much more difficult to model and anticipate their effects, and because their less direct relation to processing rates makes the extent and magnitude of necessary processing curtailments more uncertain. The Agency nevertheless believes it reasonable to permit smelters to attempt to demonstrate the reliability of such systems before requiring the use of additional engineering measures (*e.g.*, further hooding) to reduce fugitive emissions. EPA also believes that because a smelter's fugitive emission problem involves a number of site-specific factors, further study of the nature and magnitude of the problem at particular smelters may be justified before a final decision is made on necessary control measures.

Under the proposed regulations, all smelters receiving NSOs would ultimately be required to use whatever measures are necessary to prevent ambient violations resulting wholly or in significant part from fugitive emissions. Any smelter which is unable to show at the time of its application for an NSO that its fugitive emissions have no significant effect on ambient air quality in its DLA would be required to conduct a study of the problem. The study would consist primarily of at least six months of ambient monitoring around the smelter to determine the cause and effect of fugitive emissions of sulfur dioxide, total suspended particulates, arsenic, and lead. The inclusion of these other pollutants in the study is necessary, in the Administrator's judgment, to enable EPA and state agencies to devise or evaluate control strategies for fugitive emissions of sulfur dioxide that will be consistent and compatible with existing or probable EPA and OSHA requirements for the control of process and fugitive emissions of all of these pollutants.[4]

At the conclusion of the study, the NSO will be amended to require whatever control measures are necessary to assure the protection of NAAQS for sulfur dioxide. Those measures may include additional supplementary controls if the smelter can demonstrate that such controls are reliable, enforceable, and adequate to protect standards, and that their use will not interfere with the operation of the primary SCS. Where additional SCS is permitted, the regulations would require the system to be developed, tested, and approved substantially as under Subpart D. Engineering measures would also be required in addition to or in lieu of additional SCS where necessary.

5. *Subpart F: Research and Development.* Section 119(d)(1)(C)(ii) of the Act explicitly requires each smelter to agree, as a condition of receiving an NSO, to commit reasonable resources to a research and development program designed to produce more effective means of meeting its SIP emission limitation. This requirement is implemented through the regulations proposed as Subpart F.

Initially, the Agency had intended to use a formula to determine the adequacy of the resources a particular smelter proposed to devote to research and development. The purpose of using a formula was to ensure that the companies committed resources adequate to produce meaningful projects, and to relate the necessary resources to a smelter's financial position and progress in sulfur dioxide control. One preliminary formula appeared in the draft guidance. Further investigation, however, has not yielded any formula that the Agency feels is really suitable for this purpose. Instead, each applicant would be required to propose a specific project. The proposed regulations contain the basic criteria that EPA will use in deciding whether that proposed project is adequate to satisfy the requirements of section 119.

The proposed criteria reflect several goals. Of first importance is that taken together, projects conducted under NSOs (as well as independently) should result in technology that will allow all smelters to meet their emission limitations as soon as possible, but in no event later than by January 1, 1978, when second NSOs must expire. The regulations therefore provide for the advance approval of projects by EPA, and for the continuing monitoring of their results. In the Administrator's judgment, given the common technological factors throughout the industry nationally, coordination of the project approval and monitoring process on a national basis is essential to maximizing the effectiveness of the limited reasearch and development resources available.

Among the factors the Administrator will consider in assessing any proposed project are: (a) The likelihood that the project will result in more effective means of emission limitation applicable to the smelter and to the industry; (b) the adequacy of the proposed funding both for conducting the project and in comparison to pollution control research expenditure levels in other industries; (c) the probability that the project will improve environmental and occupational control of pollutants other than sulfur dioxide;

[4]The need for additional information on the fugitive emissions of nonferrous smelters is discussed further in an Advance Notice of Proposed Rulemaking (43 FR 46275; October 5, 1978) accompanying EPA's promulgation of national ambient air quality standards for lead (43 FR 46246). Any requirements for air quality monitoring established under NSOs pursuant to the final version of the regulations discussed in the text will be coordinated with corresponding requirements established under the rules suggested in the ANPR.

(d) the possible effects of the project on energy conservation; and (e) other non-air quality health and environmental effects. In assessing the adequacy of funding of a particular project, EPA will also take into account the current level of sulfur dioxide control at the smelter as well as the resources of the corporation operating the smelter.

The Administrator will approve only those projects that appear to carry a reasonable likelihood of producing significant pollution control gains for the smelter or the industry. While the Agency recognizes that the success of a project cannot be predicted in advance, it also believes that without a seriousness of purpose and an adequate financial commitment, success will not occur. It will therefore ordinarily be necessary to propose projects involving at least pilot-scale operations occurring during the first NSO in order to secure project approval. Where appropriate, the Administrator consequently intends to approve company-wide projects, and joint projects that are consistent with antitrust law.

EPA encourages smelter operators to conduct a broad range of projects, including add-on controls, process changes which will produce more treatable gas streams, and new and improved production technology which is low in generation of pollution. The Agency would not, however, regard existing expenditures in the area of process changes undertaken primarily for production-related or economic reasons as satisfying the research requirement. To satisfy the requirement, intensified or expanded efforts would be required.

Finally, the information to be sumitted to EPA under this subpart is being required in part under the authority of section 114 of the Act. It will therefore be protected under Agency regulations governing confidentiality (40 CFR Part 2).

6. *Subpart G: Compliance Schedules.* The proposed regulations require that compliance with each NSO provision be achieved as expeditiously as practicable. Subpart G sets forth the maximum intervals the Agency believes are consistent with this requirement. These timetables are based on the "worst case" assumption that the smelter will not begin to comply with the NSO requirements until the effective date of its NSO. In virtually all cases, however, compliance can be achieved at a considerably faster rate.

7. *Subpart H: Waiver of Interim Constant Control Requirements.* Section 119 permits EPA or a state to grant a waiver from the interim constant control requirement of Subpart C to any smelter which had no constant controls as of the date of enactment of the 1977 Amendments (August 7, 1977) and for which the cost of such interim controls would "necessitate" closure of the smelter for at least one year. Subpart H contains the procedures and criteria governing the granting of a waiver. A request for a waiver must be contained in the smelter operator's NSO application.

The economic criteria used in the proposed regulations to determine the effect of requiring the installation of an acid plant or other control system are recognized financial tests. Short term closure would be viewed as necessary if information supplied in accordance with Appendix A indicates that the smelter's average variable costs at all relevant levels of production (after installation of interim controls) would exceed the weighted average price of smelter output for one year or more. As discussed in connection with Subpart B, permanent closure would be regarded as necessary if the sum of the present value of the smelter's net cash flow plus its terminal value would be less (after installation of controls) than the smelter's liquidation (salvage) value. The Administrator would grant, or would recommend that a state grant, a waiver of the interim constant control requirement to any smelter meeting either of these tests.

Subpart H also contains the procedures which the Administrator would use in conducting the adjudicatory proceeding required by section 119 in reaching his determination as to the effect of the interim constant control requirement on the smelter. Under section 119, the Administrator must hold that hearing within ninety days of receipt of the request. Consequently, these regulations are intended to expedite both pre-hearing procedures and final decisions on waiver requests, while providing applicants and other interested persons a full opportunity to present pertinent information and views.

The procedures proposed here are comparable to procedures proposed by EPA on April 25, 1978 (43 FR 17484) for use in actions on applications for modified permits under section 301(h) of the Clean Water Act. The proposal is based on the "initial licensing" provisions of the Administrative Procedure Act ("APA"), 5 U.S.C. 551 *et seq.* Those provisions govern agency proceedings involving the initial grant of a license or variance where decision-making is likely to involve policy determinations of the type normally made in rulemaking and the decision-making is not conducted in an accusatory context. The statute defines a "license" to include "the whole or part of" any "statutory exemption." Initial licensing would therefore include the initial decision on the granting of such an exemption.

Under the APA, initial licensing proceedings are meant to be substantially less adversary than other formal adjudications, such as administrative penalty assessments and license revocations. In initial licensing, no "separation of functions" requirement forbidding contact between agency trial staff and ultimate decision-makers is imposed (5 U.S.C. 557(b)(1)). In addition, agencies may require that all or part of the evidence be submitted in written form (5 U.S.C. 556(d)). There is no requirement that the presiding administrative law judge prepare an initial decision; instead, any "responsible member" of the agency staff may prepare it. The legislative history of the APA indicates that these exemptions were provided for initial licensing because the decisions involved were thought to be "like rulemaking" in that they would be complex, non-accusatory, and policy-dominated. Because they do not involve accusing anyone of wrong-doing, there is no reason for "separation of functions" within the agency or for an initial decision by a statutorily independent individual. The complexity of the determinations, moreover, requires that the agency be able to draw on its staff experts freely without being hampered by such artificial barriers when they serve no purpose. *The Administrative Procedure Act—A Legislative History*, S. Doc. No. 248, 79th Cong., 2d Sess. 204, 229, 262, 361 (1946).

EPA believes that initial licensing procedures are well-suited to the interim constant control waiver decision. Waiver decisions will involve decision-making on complicated financial issues. They will not be of an "accusatory" or condemnatory nature, but will entail applying the policy of the statute in concrete situations. The policy nature of the waiver determination, moreover, is substantially similar to the initial NSO eligibility determination, which is governed by the informal rulemaking procedures of the APA. In addition, EPA believes procedures such as these are necessary to enable the Administrator to meet the time limit prescribed by Congress.

EPA has attempted to use the initial licensing procedures not only to expedite the decision-making, but also to adapt the administrative evidentiary proceedings to the non-adversary nature of the waiver determination. When a waiver request is received, the Agency will prepare a tentative determination on the request. A hearing will be held on the tentative determination if requested by the smelter operator or other interested parties, and if certain threshold requirements are met. No EPA trial staff will be designated for the hearings. Instead, a panel of agency employees with expert knowledge of, or responsibility for, the

subjects involved will be present at the hearing and will question the parties, subject to over-all control of the proceeding by an Administrative Law Judge or by a Presidential appointee representing the Administrator. The hearing will be divided into a "legislative" phase at which the parties can present their views and arguments to the panel and be questioned by it, and an "adjudicative" phase at which formal cross-examination can be ordered if certain threshold requirements are met.

After the hearing, the panel will prepare a recommended decision which may be appealed to or reviewed *sua sponte* by the Administrator. In developing his final decision, the Administrator is free to consult with panel members as well as other EPA technical staff. EPA believes this type of procedure not only complies with the literal requirements of the initial licensing provisions of the APA, but also that it better serves the policy of those provisions than would the automatic early use of adjudicative cross-examination procedures.

The Agency also wishes to emphasize that because the proceedings involved here concern highly sensitive financial information, provisions for preserving the confidentiality of that information to the fullest extent consistent with the requirements of section 119 are included in the proposed regulations. In a proceeding conducted under these procedures, parties other than the smelter operator requesting the waiver would not have acce , to all the detailed financial data used by the Agency in preparing its tentative determination. While this may make it somewhat more difficult for other persons to evaluate the tentative determination, three factors have led the Administrator to conclude that the proposal strikes a reasonable balance between providing opportunities for such parties to affect the ultimate waiver decisions and the confidentiality interests of the companies.

First, the Agency recognizes the sensitivity of some of the financial information involved, and believes that at least some protection of that information is necessary and appropriate. Second, much of the manner in which that information will be evaluated is set forth in Subpart H and Appendix A of today's proposal. Interested parties can therefore also participate in EPA's decisionmaking with respect to waivers at the present rulemaking stage. The Agency urges interested persons to examine those provisions closely, and to indicate in comments whether they believe the treatment afforded by Appendix A and the tests found in proposed section 57.802(f) of the regulations is consistent with the intent of Congress. Finally, while the specific information on which some portions of the tentative determinations are based may be held confidential, the policy determinations on the significance of that information, as well as the qualitative nature of the information where appropriate, will be stated. Taken together, the Administrator believes that the opportunity for public participation represented by this rulemaking and the actual waiver proceedings will enable members of the public to present their views effectively, while recognizing the companies' legitimate interests in preserving the confidentiality of sensitive information.

NOTE.—The Environmental Protection Agency has determined that this notice does not propose a significant regulation requiring a regulatory analysis under Executive Order 12044.

(Secs. 114, 119, and 301 of the Clean Air Act, as amended (42 U.S.C. 7414, 7419, and 7601), and sec. 406 of Pub. L. 95-95.)

Dated: January 22, 1979.

DOUGLAS M. COSTLE,
Administrator.

The Administrator proposes to establish a new Part 57 in Title 40 of the Code of Federal Regulations, to read as follows:

PART 57—PRIMARY NONFERROUS SMELTER ORDERS

Subpart A—General

Sec.
57.101 Purpose and Scope.
57.102 Eligibility.
57.103 Definitions.
57.104 Amendment of the NSO.
57.105 Submittal of Required Plans, Proposals, and Reports.
57.106 Expiration Date.
57.107 The State Agency's Transmittal to EPA.
57.108 Comparable Existing SIP Provisions.

Subpart B—The Application

57.201 Where to Apply.
57.202 How to Apply.
57.203 Contents of the Application.

Subpart C—Constant Controls and Related Requirements

57.301 General Requirements.
57.302 Performance Level of Interim Control.
57.303 Total Plant-wide Emission Level.
57.304 Bypass, Excess Emissions and Malfunctions.
57.305 Compliance Monitoring and Reporting.

Subpart D—Supplementary Control System Requirements

57.401 General Requirements.
57.402 Elements of the Supplementary Control System.
57.403 Consent to Liability.
57.404 Measurements, Records and Reports.
57.405 Formulation, Approval and Implementation of Requirements.

Subpart E—Fugitive Emission Evaluation and Control

Sec.
57.501 General Requirement.
57.502 Evaluation.
57.503 Control Measures.

Subpart F—Research and Development Requirements

57.601 General Requirements.
57.602 Approval of Proposal.
57.603 Criteria for Approval.
57.604 Evaluation of Projects.
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Appendix A—Primary Nonferrous Smelter Order (NSO) Application.

AUTHORITY: Sections 114, 119, and 301 of the Clean Air Act, as amended, 42 U.S.C. 7414, 7419, and 7601, and section 406 of Pub. L. 95-95.

Subpart A—General

§ 57.101 Purpose and scope.

The regulations in Subparts A through H govern:

(a) The eligibility of smelters for a first Primary Nonferrous Smelter Order (NSO) under section 119 of the Clean Air Act;

(b) The procedures through which a first NSO can be issued; and

(c) The required contents of each first NSO. Subparts I *et seq.*, will contain NSOs in effect for individual smelters.

§ 57.102 Eligibility.

A primary nonferrous smelter is eligible for an NSO if it meets the following conditions:

(a) The smelter was in existence and operating on August 7, 1977;

(b) The smelter is subject to an approved or promulgated sulfur dioxide (SO_2) State Implementation Plan (SIP) emission limitation which is adequate to ensure that National Ambient Air Quality Standards (NAAQS) for SO_2 are achieved without the use of

any unauthorized dispersion techniques; and

(c) The Administrator determines, based on a showing by the smelter owner, that there is no applicable control technology which has been adequately demonstrated to be reasonably available to that smelter which would enable it to comply with its SIP emission limitation for SO_2.

§ 57.103 Definitions.

"Act" means the Clean Air Act, as amended.

"Active use" refers to an SO_2 constant control system installed at a smelter before August 7, 1977 and not totally removed from regular service by that date.

"Adequate SO_2 emission limitation" means a SIP emission limitation which was approved or promulgated by EPA as adequate to attain and maintain the NAAQs without the use of any unauthorized dispersion technique.

"Administrative Law Judge" means an administrative law judge appointed under 5 U.S.C. 3105 (see also 5 CFR Part 930, as amended by 37 FR 16787), and is synonymous with the term "Hearing Examiner" as formerly used in Title 5 of the United States Code.

"Administrator" means the Administrator of the United States Environmental Protection Agency, or the Administrator's authorized representative.

"Ambient air" shall have the meaning given by 40 CFR 50.1(e), as that definition appears upon promulgation of this subpart, or as hereafter amended.

"Ambient air quality" unless otherwise specified, refers only to concentrations of sulfur dioxide in the ambient air.

"An approved measure" refers to one contained in an NSO which is in effect.

"Assistant Administrator for Air and Waste Management" means the Assistant Administrator for Air and Waste Management of the United States Environmental Protection Agency.

"Assistant Administrator for Enforcement" means the Assistant Administrator for Enforcement of the United States Environmental Protection Agency.

"Constant controls and continuous emission reduction technology" mean a system which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.

"Effective date of an NSO" means the effective date listed in the FEDERAL REGISTER publication of EPA's issuance or approval of an NSO.

"EPA" means the Administrator of the United States Environmental Protection Agency, or the Administrator's authorized representative.

"Fugitive emissions" means any air pollutants emitted to the atmosphere from any locations at the smelter other than final stack emission points.

"Issuance" of an NSO means the final transmittal of the NSO pursuant to § 57.107(a) by an issuing agency (other than EPA) to EPA for approval, or the publication of an NSO issued by EPA in the Federal Register.

"Issuing agency", unless otherwise specifically indicated, includes both EPA and the state or local air pollution control agency to which a smelter's owner has applied for an NSO, or which has issued the NSO. Any showings or demonstrations required to be made under this part to the issuing agency are subject to independent determinations by EPA.

"Judicial Officer" means an attorney who is a permanent or temporary employee of the United States Environmental Protection Agency.

"Malfunction" means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions. A malfunction can exist only for the minimum time necessary to implement corrective measures.

"Maximum production capacity" means either the maximum demonstrated rate at which a smelter has produced its principal metallic final product under the process equipment configuration and operating procedures.

"NAAQS" and "National Ambient Air Quality Standards", unless otherwise specified, refer only to the National Primary and Secondary Ambient Air Quality Standards for sulfur dioxide prevailing on or before August 7, 1977, or a rate which the smelter is able to demonstrate by calculation is attainable with existing process equipment.

"Scheduled maintenance" means any routine, periodic procedure necessary to maintain the integrity or reliability of emissions control performance, regardless of how often the procedure must be employed. It includes the screening or replacement of catalyst, the re-tubing of heat exchangers in sulfuric acid plants, and the routine repair and cleaning of gas cleaning equipment.

"Smelter owner" includes the owner or operator of the smelter.

"Supplementary control system" (SCS) means any technique for limiting the concentration of a pollutant in the ambient air by varying the emissions of that pollutant according to atmospheric conditions. For the purposes of this part, the term supplementary control system does not include any dispersion technique based solely on the use of a stack the height of which exceeds good engineering practice (as determined under regulations implementing section 123 of the Act).

"Unauthorized dispersion technique" refers to any dispersion technique which, under section 123 of the Act and the regulations promulgated pursuant to that section, may not be used to reduce the degree of emission limitation otherwise required in the applicable SIP.

§ 57.104 Amendment of the NSO.

An NSO shall be amended whenever necessary for compliance with the requirements and purposes of this part. A state or local issuing agency may propose to amend any NSO it has issued. Any amendment proposed by a State or local issuing agency shall be subject to approval by EPA to the same extent as was the original NSO. Any smelter owner may apply to the agency which originally issued its NSO for an amendment of the NSO at any time. Such an application shall be accompanied by whatever documentation is required by that agency (or EPA) to support the requested amendment. This section shall not apply to termination or revocation of NSOs, or to a requirement for the use of additional systems of continuous emission reduction technology.

§ 57.105 Submittal of required plans, proposals, and reports.

The failure of a smelter owner to submit any plan, report, document or proposal as required by its NSO or by this part shall constitute a violation of its NSO.

§ 57.106 Expiration date.

Each NSO shall state its expiration date. No NSO shall expire later than January 1, 1983.

§ 57.107 The State Agency's Transmittal to EPA.

(a) *Content and bases of the State or local agency's NSO.* Issuance of an NSO by a State or local agency shall be completed by the State's transmittal to the appropriate EPA Regional Office of:

(1) The text of the NSO;

(2) The application submitted by the smelter owner, any correspondence between the issuing agency and the applicant relating to the NSO, and any material submitted in support of the application.

(3) A concise statement of the State or local agency's findings and their bases; and

(4) Any documentation prepared by or for the issuing agency in support of the NSO.

(b) *The State or local agency's enforcement plan.* The transmittal under paragraph (a) of this section shall be accompanied by a description of the State's plans for monitoring compliance with and enforcement of the NSO. The transmittal shall also include a description of the resources which will be used to implement those plans.

§ 57.108 Comparable existing SIP provisions.

Notwithstanding any other provision of this part, an NSO may contain provisions to which the affected smelter is subject under the applicable EPA-approved state implementation plan (SIP) for sulfur dioxide in lieu of the corresponding provisions which would otherwise be required under this part if the Administrator determines that those SIP provisions are substantially equivalent to the corresponding NSO provisions which would otherwise be required, and if the Administrator determines that the smelter is in substantial compliance with those SIP provisions. For the purposes of this section, provisions to which the affected smelter is subject under the applicable EPA-approved State Implementation Plan are those which became effective before the smelter owner applied for the NSO.

Subpart B—The Application

§ 57.201 Where to apply.

Any eligible smelter may apply for an NSO to the appropriate EPA Regional Office or to the appropriate State or local air pollution control agency. In all cases, those parts of the application required to be submitted under § 57.203(b) (eligibility) and § 57.602 (research and development) shall be sent directly to the Director, Division of Stationary Source Enforcement (EN-341), U.S. Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460, Attention: Confidential Information Unit.

§ 57.202 How to apply.

(a) *Letter of intent.* To initiate an application for an NSO, the owner or operator of a smelter shall send a letter of intent to an appropriate air pollution control agency. The letter of intent shall contain a statement of the owner's intent to apply for an NSO, and an agreement to provide any information required under this subpart and Appendix A. The letter of intent shall be signed by a corporate official authorized to make such commitments. Upon receipt by the issuing agency of any letter of intent postmarked within 2 weeks after the effective date of this subpart, or within 2 weeks after the effective date of any SIP emission limitation for sulfur dioxide which is promulgated or approved after the effetive date of this subpart, the federal SIP emission limitation for sulfur dioxide shall be deemed suspended for 90 days.

(b) *Complete application.* (1) No later than 90 days after the letter of intent has been sent, the smelter owner shall submit its completed application pursuant to § 57.201. The 90 day period may be extended once for 30 days at the discretion of the issuing agency. Receipt of all parts of a substantially complete application postmarked within the original or extended application period shall be deemed to continue the suspension of the federal SIP emission limitation for SO_2 until the issuing agency (other than EPA) issues or declines to issue an NSO, or until EPA issues or declines to issue and NSO. This suspension shall in all cases terminate, however, 90 days after receipt of the substantially completed application, unless extended for good cause at the discretion of the Administrator. Whether or not an application is substantially complete shall also be a decision within the Administrator's sole discretion.)

(2) If an issuing agency transmits an NSO to EPA for approval before the expiration of the suspension of the federal SIP emission limitation, the suspension shall continue until EPA approves or disapproves the NSO. Such action shall be taken by EPA within 90 days of receipt of a transmittal under § 57.107.

§ 57.203 Contents of the application.

(a) *Claim of confidentiality.* The smelter owner may make a business confidentiality claim covering all or part of the information in the NSO application in accordance with 40 CFR Part 2, Subpart B (41 FR 36906 *et seq.*, September 1, 1976, as amended by 43 FR 39997 *et seq.*, September 8, 1978). A claim is completely effective only if it is made at the time of application. A claim shall be made by attaching to the information a notice of confidentiality. Information claimed as confidential will be governed by the provisions of 40 CFR Part 2, Subpart B. If no claim accompanies the information, it may be made available to the public without further notice.

(b) *Eligibility information.* Each smelter owner shall make the showing required by § 57.102(c) by completing and submitting Appendix A to this part as a part of its application. The Administrator shall find a smelter eligible; under § 57.102(c) if the information supplied on Appendix A (plus any necessary supplemental information) shows, according to the criteria, procedures, and tests contained in Appendix A, that (after installation of the full constant control equipment required to comply with its emission limitation) the sum of the present value of the smelter's future net cash flow, less depreciation, plus its terminal value would be less than the smelter's liquidation (salvage) value.

(c) *Current operating information.* A complete NSO application shall also contain the following information:

(1) A process flow diagram of the smelter, including current process and instrumentation diagrams for all processes or equipment which may emit or affect the emission of sulfur dioxide; the characteristics of all gas streams emitted from the smelter's process equipment (flow rates, volumes, compositions, and variations over time); and a list of all monitoring data and strip charts, including all data, charts, logs or sheets kept with respect to the operation of any process equipment which may emit or affect the emission of sulfur dioxide;

(2) The smelter's maximum daily production capactiy (as defined in § 57.103 (r)), as of August 7, 1977; the operational rate (in pounds of charge per hour) of each major piece of process equipment when the smelter is operating at that capacity; and the smelter's average and maximum daily production rate for each product, coproduct, or by-product, by year, for the past 3 years;

(3) The optimal conversion efficiency of an acid plant or other sulfur dioxide control system under the normal process operating conditions (excluding malfunctions) most conducive to optimal conversion efficiency;

(4) The average conversion efficiency of any acid plant or other sulfur dioxide control system during normal process operations (excluding malfunctions) by month, during the past 3 years;

(5) The percent of the time the acid plant or other control system was available for service during each month for the past 3 years, excluding down time for scheduled maintenance, and a full explanation of any major or recurring problems with the system during that time;

(6) The frequency and duration of times during the past 3 years when the SO_2 control system was unavailable because of scheduled maintenance of the system;

(7) A description of all scheduled periodic shut-downs of the smelter during the past 3 years, including their purpose, frequency and duration; and the same information with respect to unscheduled shut-downs;

The gas volume, rates, and SO_2 conncentration which the control system was actually designed to accommodate, taking into account any

modifications made after its installation;

(9) The average montly sulfur balance across the process and control equipment, including fugitive emissions, for the past 3 years; and

(10) A description of engineering techniques now in use at the smelter to prevent the release of fugitive emissions into the atmosphere at low elevations.

(d) *The smelter owner's proposals.* The smelter owner shall submit as part of its application draft NSO provisions which would implement the requirements of Subparts C through G of this part. The issuing agency may use these proposals as the basis for any NSO that may be granted, or may modify these proposals in any way it deems necessary in order to comply with the requirements of this part.

(e) *Additional information.* The smelter owner shall designate in its application a corporate officer responsible and authorized to supply supplemental technical and economic information and explanations as required by the issuing agency during the formulation of the NSO. Failure to supply such information and explanations shall constitute a failure to submit a complete application.

(f) *Request for a waiver of constant controls.* Any request for a waiver of the interim constant control requirement of § 57.301 shall be included in the application for an NSO. The application shall contain all information required by this part which is pertinent to a facility that lacks constant controls. The criteria and procedures for granting the waiver are governed by Subpart H and Appendix A of this part.

Subpart C—Constant Controls and Related Requirements

§ 57.301 General requirements.

Each NSO shall require an interim level of sulfur dioxide constant controls to be operated at the smelter, unless a waiver of this requirement has been granted to the owner under Subpart H of this part. Except as otherwise provided in § 57.304, any constant controls in active use as of August 7, 1977, shall be properly operated and maintained at all times. The NSO shall require the following gas streams to be treated by constant controls:

(a) In copper smelters, off-gases from fluidized bed roasters, flash furnaces, NORANDA reactors, electric furnaces, and copper converters;

(b) In lead smelters, off-gases from the front end of the sintering machine and any other sinter gases which are currently re-circulated;

(c) In zinc smelters, off-gases from multi-hearth roasters, flash roasters and fluidized bed roasters; and

(d) In all smelters, any other process streams which were regularly or intermittently treated by constant controls at the smelter as of August 7, 1977.

§ 57.302 Performance level of interim constant controls.

(a) *Maximum feasible efficiency.* Each NSO shall require: that the smelter operate its constant control systems at their maximum feasible efficiency, including any improvements necessary to correct the effects of any serious deficiencies; that the process and control equipment be maintained in the way best designed to ensure such operation; and that process operations be scheduled and coordinated to treat process gas streams to the maximum possible extent. Maximum feasible efficiency shall be expressed in the NSO in the form of a limitation on the concentration of SO_2 in the tail gas of the control system in combination with an appropriate averaging period, as provided below in paragraphs (b) and (c) of this section.

(b) *The limitation level for SO_2 concentration in the control system tail gas.* The level at which the concentration limitation is set shall take into account fluctuations in the strength and volume of process off-gases to the extent that those fluctuations affect the SO_2 content of the tail gas and cannot be avoided by improved scheduling and coordination of process operations. The limitation shall exclude the effect of any increase in emissions caused by process or control equipment malfunction. the limitation shall take into account unavoidable catalyst deterioration in sulfuric acid plants, but may prescribe the frequency of catalyst screening or replacement. The NSO shall also prohibit the smelter owner from using dilution air to meet the limitation.

(c) *Averaging period.* (1) The averaging period shall be derived in combination with the concentration limitation and shall take into account the same factors described in paragraph (b). The averaging periods established under this paragraph should generally not exceed the following:

(i) For sulfuric acid plants on copper smelters, 12 hour running average;

(ii) For sulfuric acid plants on lead smelters, 6 hour running average;

(iii) For sulfuric acid plants on zinc smelters, 2 hour running average;

(iv) For dimethylaniline (DMA) scrubbing units on copper smelters, 2 hour running average.

(2) A different averaging period may be established if the applicant demonstrates that such a period is necessary in order to account for the factors described in paragraph (b) of this section, provided that the period is enforceable and satisfies the criteria of paragraph (a) of this section.

(d) *Improved performance.* (1) The performance level representing maximum feasible efficiency for any existing control system (*e.g.*, a sulfuric acid plant or a DMA scrubber) shall require the correction of the effects of any serious deficiencies in the system. For the purposes of this paragraph, at least the following problems shall constitute serious deficiencies in acid plants:

(i) Heat exchangers and associated equipment inadequate to sustain efficient, autothermal operation over the full range of gas strengths and volumes routinely generated by process equipment;

(ii) Failure to completely fill all available catalyst bed stages with sufficient catalyst;

(iii) Inability of the gas pre-treatment system to prevent unduly frequent plugging or fouling (deterioration) of catalyst or other components of the acid plant; or

(iv) Blower capacity inadequate to permit the treatment of the full volume of gas which the plant could otherwise accommodate, to the extent that this inadequacy results in bypassing of treatable gas around the plant.

(2) Notwithstanding any contrary provisions of § 57.304(c) (malfunction demonstration), no excess emissions (as defined in § 57.304(a)) shall be considered to have resulted from a malfunction if the smelter owner has not upgraded serious deficiencies in the constant control system in compliance with the requirements of § 57.302(d)(1), unless the smelter owner demonstrates under § 57.304(c) that compliance with those requirements would not have affected the magnitude of the emission.

(e) *Multiple control devices.* (1) At any smelter where off-gas streams can be treated by various existing control systems (*e.g.*, multiple acid plants or a DMA scrubber and an acid plant), the NSO shall require the use of those systems in the combination that will result in the maximum feasible net SO_2 removal.

(2) To the extent that compliance with this requirement is demonstrated by the smelter to result in excess emissions during unavoidable start up and shut down of the control systems, those excess emissions shall not constitute violations of the NSO.

§ 57.303 Total plant-wide emission limitation.

(a) *Calculation of the emission limitation.* Each NSO shall contain a requirement limiting the total allowable emissions from the smelter to the level which would have been associated with production at the smelter's maximum production capacity (as defined in § 57.103(r)) as of August 7, 1977. This limitation shall be expressed in

units of mass per time and shall be calculated as the sum of stack emissions from uncontrolled processes, captured fugitive emissions, and emissions from any control systems (operating at the efficiency prescribed under § 57.302). These emission rates may be derived from either direct measurements or appropriately documented mass balance calculations.

(b) *Compliance with the emission limitation.* Each NSO shall require the use of specific, enforceable testing methods and measurement periods for determining compliance with the limitation established under paragraph (a) of this section.

§ 57.304 Bypass, excess emissions and malfunctions.

(a) *Definition of excess emissions.* For the purposes of this subpart, any emissions greater than those permitted by the NSO provisions established under § 57.302 (performance level of interim constant controls) or § 57.303 (plant-wide emission limitation) of this subpart shall constitute excess emissions. Emission of any gas stream identified under § 57.301(a), (b), (c), or (d) of this subpart that is not treated by a sulfur dioxide control system shall also constitute an excess emission under this subpart.

(b) *The excess emission report.* Each NSO shall require the smelter to report all excess emissions to the issuing agency, as provided in § 57.305(b) of this subpart. The report shall include the following:

(1) Identity of the stack or other emission points where the excess emissions occurred;

(2) Magnitude of the excess emissions expressed in the units of each applicable emission limitation, as well as the operating data, documents, and calculations used in determining the magnitude of the excess emissions;

(3) Time and duration of the excess emissions;

(4) Identity of the equipment causing the excess emissions;

(5) Nature and cause of such excess emission;

(6) Steps taken to limit the excess emissions, and when those steps were commenced;

(7) If the excess emissions were the result of a malfunction, the steps taken to remedy the malfunction and to prevent the recurrence of such malfunction; and

(8) At the smelter owner's election, the demonstration specified in paragraph (c) of this section.

(c) *Malfunction demonstration.* Except as provided in § 57.302(e)(2), or in paragraph (d) of this section, any excesss emission shall be a violation of the NSO unless the owner demonstrates in the excess emissions report required under paragraph (b) of this section that the excess emission resulted from a malfunction (or an unavoidable start up and shut down resulting from a malfunction) and that:

(1) The air pollution control systems, process equipment, or processes were at all times maintained and operated, to the maximum extent practicable, in a manner consistent with good practice for minimizing emissions;

(2) Repairs were made as expeditiously as practicable, including the use of off-shift labor and overtime;

(3) The amount and duration of the excess emissions were minimized to the maximum extent practicable during periods of such emissions;

(4) The bypass of SO_2 streams (which are otherwise required to be treated) around control systems was limited to the maximum extent practicable; and

(5) The excess emissions were not part of a recurring pattern indicative of serious deficiencies in, or inadequate operation and maintenance of, the process or control equipment.

(d) *Scheduled maintenance exception.* Excess emissions occuring during scheduled maintenance shall not constitute violations of the NSO to the extent that:

(1) The expected additional annual sulfur dioxide removal by any control system (including associated process changes) for which construction had not commenced (as defined in 40 CFR 60.2(g) and (i)) as of August 7, 1977, and which the smelter owner agrees to install and operate under Subpart F, would have offset such excess emissions if the system had been in operation throughout the year in which the maintenance was performed;

(2) The system is installed and operated as provided in the NSO provisions established under Subpart F; and

(3) The system performs at substantially the expected efficiency and reliability subsequent to its initial break-in period.

(e) *EPA emergency authority.* Nothing in this section shall be construed to limit the authority of the Administrator to take any action under section 303 of the Clean Air Act.

§ 57.305 Compliance monitoring and reporting.

(a) *Monitoring.* (1) Each NSO shall require compliance with the control system performance requirements established pursuant to this subpart, to be determined through the use of continuous monitors for measuring SO_2 concentration.

(i) Such monitors must be installed, operated and maintained in accordance with the performance specifications and other requirements contained in Appendix D to 40 CFR Part 52. The monitors must take and record at least one measurement of SO_2 concentration from the effluent of each control system in each 15 minute period.

(ii) The sampling point shall be located at least 8 stack diameters (diameter measured at sampling point) downstream and 2 diameters upstream from any flow disturbance such as a bend, expansion, constriction, or flame, unless another location is approved by the Administrator.

(iii) The sampling point for monitoring emissions shall be in the duct at the centroid of the cross section if the cross sectional area is less than 4.645 m^2 (50 ft^2) or at a point no closer to the wall than 0.914 m (3 ft) if the cross sectional area is 4.645 m^2 (50 ft^2) or more. The monitor sample point shall be in an area of small spatial concentration gradient and shall be representative of the concentration in the duct.

(iv) The measurement system(s) installed and used pursuant to this paragraph shall be subject to the manufacturer's recommended zero adjustment and calibration procedures at least once per 24-hour operating period unless the manufacturer specifies or recommends calibration at shorter intervals, in which case such specifications or recommendations shall be followed. Records of these procedures shall be made which clearly show instrument readings before and after zero adjustment and calibration.

(v) The use of manual source testing methods (equivalent to 40 CFR Part 60, Appendix A) may also be specified as an acceptable additional (but not alternative) method for making compliance determinations.

(2) Each NSO shall require the continuous monitoring of any ducts or flues used to bypass gases, required under this subpart to be treated by constant controls, around the smelter's sulfur dioxide constant control system(s) for ultimate discharge to the atmosphere. Such monitoring shall be adequate to disclose the time of the bypass, its duration, and the approximate volume of gas bypassed.

(b) *Reporting.* (1) Each NSO shall require that the smelter maintain a record of all measurements required under paragraph (a) of this section. Results shall be summarized monthly and shall be submitted to the issuing agency within 15 days after the end of each month. The smelter owner shall retain a record of such measurements for the duration of the NSO and for as long thereafter as may be necessary for the purpose of including such records in an application for a second NSO.

(2) Each NSO shall require that the smelter maintain a record of all measurements and calculations required under § 57.303(b). Results shall be summarized on a monthly basis and

shall be submitted to the issuing agency at 6-month intervals. The smelter owner shall retain a record of such measurements and calculations for the duration of the NSO and for as long thereafter as may be necessary for the purposes of including such information in an application for a second NSO.

(3) The report required under § 57.304(b) shall accompany the report required under paragraph (b)(1) of this section.

Subpart D—Supplementary Control System Requirements

§ 57.401 General requirement.

Subject to the provisions of Subpart E, each NSO shall require the smelter owner to prevent all violations of the NAAQS in the smelter's designated liability area (DLA) through the operation of an approved supplementary control system (SCS).

§ 57.402 Elements of the supplementary control system.

Each supplementary control system shall contain the following elements:

(a) *Air quality monitoring network.* An approvable SCS shall include the use of appropriate ambient air quality monitors to continuously measure the concentration of sulfur dioxide in the air in the smelter's DLA.

(1) The monitors shall be located at all points of expected maximum SO_2 concentrations in the smelter's DLA. The determination of the locations where maximum concentrations may occur shall take into account all probable meteoroloical and operating conditions, as well as the presence of other sources of SO_2 significantly affecting SO_2 concentrations in the DLA.

(2) The number and location of sites shall be based on dispersion modeling, measured ambient air quality data, meteorological data and other meteorological information. The system shall include the use of at least 7 fixed monitors unless the issuing agency determines, on the basis of a demonstration by the smelter, that the use of fewer monitors would not limit coverage of points of maximum concentration or otherwise reduce the capability of the smelter owner to prevent all violations of the NAAQS in the smelter's DLA. The system shall also include at least one mobile monitor to be sited as the issuing agency may direct from time to time.

(3) All monitors shall be continuously operated and maintained and shall meet the performance specifications contained in 40 CFR Part 53. The monitors shall be capable of routine real time measurement of maximum expected SO_2 concentrations for the averaging times of SO_2 NAAQS.

(4) The smelter owner shall allow unrestricted access to the issuing agency to inspect, verify calibration of, and obtain data from the monitors.

(b) *Meterological network.* The SCS must have a meteorological assessment capability adequate to identify conditions requiring emission curtailment to prevent possible violations of the NAAQS. The meteorological assessment capability shall provide all forecast and current information necessary for successful use of the system's operational manual, which is required by paragraph (e) of this section.

(c) *Designated liability area.* The system shall be required to prevent all violations of the NAAQS within the smelter's DLA. The DLA of any smelter is the area within which the smelter's uncontrolled emissions may cause or significantly contribute to violations of the NAAQS for SO_2 when the smelter is operating at its maximum production capacity under any probable meteorological conditions. The boundaries of that area shall be specified in the NSO.

(1) The DLA shall ordinarily be a circle with a center point at the smelter's tallest stack and a minimum radius as given in the following table:

RADIUS FOR UNCONTOLLED SO_2 EMISSION RATES

Emission rate in tons per hour	Emission rate in grams per sec.	Radius in kilometers
16 or less	4,000 or less	11
24	6,000	16
32	8,000	24
40	10,000	32
48 or more	12,000 or more	40

Minimum radii may be determined from the table by linear interpolation.

(2) The NSO may provide for a DLA with different boundaries if the smelter owner can demonstrate through the use of appropriate dispersion modeling and ambient air quality monitoring data that the smelter's uncontrolled emissions could not cause or significantly contribute to a violation of the NAAQS beyond the boundaries of such a different area under any probable meteorological conditions.

(3) A violation of the NAAQS in the DLA of any smelter shall constitute a violation of that smelter's NSO, unless the issuing agency determines on the basis of a showing by the smelter owner that:

(i) The smelter owner had taken all emission curtailment action indicated by the SCS operational manual; and

(ii) The violation was caused in significant part by emissions of another source(s) which were in excess of the maximum permissible emissions applicable to such source(s), as defined in paragraph (e)(2) of this section.

(d) *Overlapping designated liability areas.* Notwithstanding any other provisions of this subpart, the following requirements shall apply whenever the designated liability areas of two or more smelters do, or may, overlap:

(1) In the case of any NSO applicant that would have a DLA which would overlap with the DLA of any other smelter that has applied for an NSO or has an NSO in effect, the NSO applicant shall include in its application an enforceable joint plan, agreed to by such other smelter(s). In determining whether a joint plan is required, the NSO applicant shall calculate its DLA according to the table in paragraph (c)(1). The DLA of the other smelter shall be calculated according to the table in paragraph (c)(1) unless the other smelter has an NSO in effect, in which case the boundaries in that NSO shall be used. The enforceable joint plan shall provide for:

(i) Emission curtailment adequate to ensure that the NAAQS will not be violated in any areas of overlapping DLAs; and

(ii) Conclusive prospective allocation of legal liability in the event that the NAAQS are violated in the area of overlapping DLAs.

Such plans may, but need not, include the operation of a joint SCS system. Each NSO shall require adherence by the NSO applicant owner to the joint plan for emission curtailment and allocation of liability, unless the issuing agency determines, pursuant to the provisions of paragraph (c)(2) of this section, that the NSO applicant's DLA does not overlap with that of any other smelter.

(2) In the case of any NSO applicant that would have a DLA which would overlap with the DLA of any other smelter whose owner has not applied for an NSO (and does not have an NSO in effect), the NSO applicant's submittal shall contain a written consent, signed by a corporate official empowered to do so. The consent shall state that if, at any time thereafter, the owner of an other smelter applies for an NSO, and the other smelter's DLA would overlap with the NSO applicant's DLA, the NSO applicant will negotiate and submit an enforceable joint plan for emission curtailment and allocation of liability (as described in paragraph (1)). In determining whether it is necessary to submit such a consent, each smelter's DLA shall be calculated according to the table set forth in paragraph (c)(1) of this section. The consent shall state that a joint plan shall be submitted within 90 days of the issuing agency's notification to the NSO applicant of receipt of the other smelter's letter of intent, unless the issuing agency determines that the DLAs do not overlap. Failure of the NSO applicant to submit such a

plan shall constitute grounds for denial of its NSO application or a violation of an effective NSO, as applicable.

(e) *The SCS operational manual.* Each NSO shall require the smelter to operate in accordance with the provisions of an SCS operational manual approved by the issuing agency. The SCS operational manual shall describe the circumstances under which, the extent to which, and the procedures through which emissions shall be curtailed to prevent violations of the NAAQS in the smelters's DLA. Failure to curtail emissions when and as much as indicated by the manual or to follow the provisons of the manual implementing the requirements of subparagraph (3) of this paragraph shall constitute a violation of the NSO.

(1) The operational manual shall prescribe emission curtailment decisions based on the use of real time information from the air quality monitoring network, dispersion model estimates of the effect of emissions on air quality, and meteorological observations and predictions.

(2) The operational manual shall also provide for emission curtailment to prevent violation of the NAAQS within the smelter's DLA which may be caused in part by emissions from other sources (unless those other sources are smelters subject to NSOs). Such provisions may be designed on the assumption that the emissions from the other sources do not exceed their maximum permissible emissions. As used in this paragraph, maximum permissible emissions for other sources are the highest of (i) SIP emission limitations; (ii) orders in effect under section 113 of the Clean Air Act; or (iii) compliance date extensions under former section 119 of the Clean Air Act (relating to coal conversions).

(3) The SCS operational manual shall include (but not be limited to):

(i) A clear delineation of the authority of the SCS operator to require all other smelter personnel to implement the operator's curtailment decisions;

(ii) The maintenance and calibration procedures and schedules for all SCS equipment;

(iii) A description of the procedures to be followed for the regular acquisition of all meteorological information necessary to operate the system;

(iv) The ambient concentrations and meteorological conditions that will be used as criteria for determining the need for various degrees of emission curtailment;

(v) The meteorlogical variables as to which judgments may be made in applying the criteria stated pursuant to paragraph(e)(3)(iv) of this section;

(vi) The procedures through which and the maximum time period within which a curtailment decision will be made and implemented by the SCS operator;

(vii) The method for immediately evaluating the adequacy of a particular curtailment decision, including the factors to be considered in that evaluation;

(viii) The procedures through which and the time within which additional necessary curtailment will immediately be effected; and

(ix) The procedures to be followed to protect the NAAQS in the event of a mechanical failure in any element of the SCS.

(f) *Continuing review of the SCS.* Each NSO shall require the smelter owner to continously review the design and operation of the SCS to determine what measures may be available for improving the performance of the system. The NSO shall also require the submission of an annual report to the issuing agency detailing the results of this review and specifying measures implemented to prevent the recurrence of any ambient violations.

§ 57.403 Consent to liability.

(a) *The consent.* The NSO shall include a consent, signed by a corporate official empowered to do so, that in any judicial or administrative proceeding to enforce the NSO, the smelter owner will not contest:

(1) Liability for any violation of the NAAQS in the smelter's DLA, except on the grounds that a DLA determination under § 57.402(c)(3) was clearly wrong; or

(2) The conclusive allocation of liability between it and any other smelter(s) for any violation of the NAAQS in an area of overlapping DLAs, pursuant to § 57.402(d).

(b) *Rights not waived by the consent.* This consent shall not be deemed to waive any right(s) to judicial review of any provisions of an NSO that are otherwise available to the smelter owner or operator under section 307(b) of the Clean Air Act.

§ 57.404 Measurements, records, and reports.

(a) *Measurements.* Each NSO shall require the smelter owner to install, operate, and maintain a measurement system(s) for continously monitoring sulfur dioxide emissions and stack gas volumetric flow rates in each stack which could emit 5 percent or more of the smelter's total potential (uncontrolled) hourly sulfur dioxide emissions.

(1) Such monitors shall be installed, operated, and maintained in accordance with the performance specifications and other requirements contained in Appendices D and E to 40 CFR Part 52. The monitors must take and record at least one measurements of sulfur dioxide concentration and stack gas flow rate from the effluent of each affected stack in each fifteen-minute period.

(2) The sampling point shall be located at least eight stack diameters (diameter measured at sampling point) downstream and two diameters upstream from any flow disturbance such as a bend, expansion, constriction, or flame, unless another location is approved by the Administrator.

(3) The sampling point for monitoring emissions shall be in the duct at the centroid of the cross section if the cross sectional area is less than 4.645 m^2 (50 ft^2) or at a point no closer to the wall than 0.914 m (3 ft.) if the cross sectional area is 4.645 m^2 (50 ft^2) or more. The monitor sample point shall be in an area of small spatial concentration gradient and shall provide a sample which is representative of the concentration in the duct.

(4) The measurement system(s) installed and used pursuant to this paragraph shall be subject to the manufacturer's recommended zero adjustment and calibration procedures at least once per 24-hour operating period unless the manufacturer specifies or recommends calibration at shorter intervals, in which case such specifications or recommendations shall be followed. Records of these procedures shall be made which clearly show instrument readings before and after zero adjustment and calibration.

(5) The results of such monitoring shall be submitted in the form and with the frequency specified in the NSO.

(b) *Records.* Each NSO shall require the smelter owner to maintain records of the air quality measurements made, meteorological information acquired, and emission curtailments ordered (including the identity of the persons making such decisions) during the operations of the SCS. These records shall be maintained for the duration of the NSO, and for as long thereafter as may be necessary for purposes of applying for a second NSO, and shall be furnished to the issuing agency upon request.

(c) *Reports.* Each NSO shall require the smelter owner to:

(1) Submit a monthly summary indicating all places and times at which the NAAQS for SO_2 were equalled or violated in the smelter's DLA, and stating the SO_2 concentrations at such times;

(2) Immediately notify EPA and the state agency any time concentrations of SO_2 in the ambient air in the smelter's DLA reaches 0.3 parts per million (800 micrograms/cubic meter), 24-hour average, or exceed the warning stage in any more stringent emergency plan in the applicable state implementation plan; and

(3) Make such other reports as may be specified in the NSO.

§ 57.405 Formulation, approval, and implementation of requirements.

(a) *SCS content of the application.* The requirements of § 57.203(d) shall be satisfied with respect to this subpart as follows:

(1) Each NSO application shall include a complete description of any supplementary control system in operation at the smelter at the time of application and a copy of any SCS operating manual in use with that system.

(2) Each NSO application shall contain proposed NSO provisions for compliance with the requirements of §§ 57.401, 57.402 (c), (d), and (f), 57.403, 57.404, and 57.405(b)(2).

(3) Each NSO application shall include a specific plan for the development of a system fulfilling the requirements of § 57.402 (a), (b), and (e) (covering air quality monitoring network meteorological network, and the SCS operational manual).

(b) *SCS content of the order.* (1) Each NSO shall include an approved version of the plan described in paragraph (a)(3) of this section and shall provide increments of progress towards its completion.

(2) Each NSO shall require the submission of a final report evaluating the performance and adequacy of the SCS developed pursuant to the approved plan. The report shall include:

(i) A detailed description of how the criteria that form the basis for particular curtailment decisions were derived;

(ii) A complete description of each SCS element listed in § 57.402 (a) through (d) (covering monitoring, meteorology, and the DLA), and an explanation of why the elements fulfill the requirements of those sections;

(iii) A reliability study demonstrating that the SCS will prevent violations of the NAAQS in the smelter's DLA at all times. The reliability study shall include a comprehensive analysis of the system's operation during one or more three-month seasonal periods when meteorological conditions creating the most serious risk of NAAQS violations are likely to occur; and

(iv) A copy of the current SCS operational manual.

(c) *Amendment of the NSO.* Each NSO shall be amended, after the submission of the final report required under paragraph (b)(2), to reflect the most current approved elements of the SCS and to fulfill all other requirements of this subpart. Each NSO shall also be subsequently amended (as provided in § 57.104) whenever necessary to reflect improved SCS operating procedures or other system requirements.

Subpart E—Fugitive Emission Evaluation and Control

§ 57.501 General requirement.

Each NSO shall require the smelter owner to use such control measures as may be necessary to ensure that the smelter's fugitive emissions do not result in violations of the NAAQS for SO_2 in the smelter's DLA.

§ 57.502 Evaluation.

(a) *Evaluation at the time of application.* Any smelter owner may demonstrate the impact that fugitive emissions of SO_2 have upon the NAAQS or air quality by means of air quality monitoring data and modeling calculations submitted at the time of application.

(b) *Evaluation during the first 6 months of the NSO.* Any smelter owner who is unable to demonstrate at the time of application for an NSO that the smelter's SO_2 fugitive emissions will not cause or significantly contribute to violations of the NAAQS in the smelter's DLA shall instead submit the design and workplan for a study adequate to assess the actual impact of all of its fugitive emissions upon ambient air quality. The design and workplan of the study shall be approved by the issuing agency and included in the NSO. The study shall commence upon the date when the NSO becomes effective, and an analysis of its results shall be submitted to the issuing agency no later than ten months following that date. The study shall include a 6-month period during which the ambient air shall be monitored to determine the impact of fugitive emissions of sulfur dioxide, arsenic, lead, and total suspended particulates on the ambient air quality in the smelter's DLA.

§ 57.503 Control measures.

The NSO of any smelter subject to the requirements of § 57.502(b) shall be amended as provided in § 57.704(d) to implement the requirement of § 57.501. Measures required to be implemented may include:

(a) *Additional supplementary control.* The use of the supplementary control system, if the additional use of the system does not interfere with the smelter owner's ability to meet the requirements of subpart D; and

(b) *Engineering and maintenance techniques.* The use of engineering and maintenance techniques to detect and prevent leaks and capture and vent fugitive emissions through appropriate stacks. These techniques include but are not limited to:

(1) For reactors, installation and proper operation of primary hoods;

(2) For roasters, installation and proper operation of primary hoods on all hot calcine transfer points;

(3) For furnaces, installation and proper operation of primary hoods on all active matte tap holes, matte launders, slag skim bays, and transfer points;

(4) For converters, installation and proper operation of primary hoods for blowing operations, and where appropriate, secondary hoods for charging and pouring operations;

(5) For sintering machines, installation and proper operation of primary hoods on the sinter bed, all hot sinter ignition points, all concentrate laydown points, and all hot sinter transfer points;

(6) For blast furnaces, installation and proper operation of primary hoods on all active slag and lead bullion furnace tap holes and transfer points;

(7) For dross reverberatory furnaces, installation and proper operation of primary hoods on all active charging and discharging points;

(8) Maintenance of all ducts, flues and stacks in a leak-free condition to the maximum extent possible;

(9) Maintenance of all process equipment under normal operating conditions in such a fashion that out-leakage of fugitive gases will be prevented to the maximum extent possible;

(10) Secondary or tertiary hooding on process equipment where necessary; and

(11) Partial or complete building evacuation as appropriate.

Subpart F—Research and Development Requirements

§ 57.601 General requirement.

Each NSO shall require the smelter to conduct or participate in a specific research and development program designed to develop more effective means of compliance with the sulfur dioxide control requirements of the applicable state implementation plan than presently exist.

§ 57.602 Approval of proposal.

(a) *The smelter owner's proposal.* The smelter owner's NSO application shall include a proposed NSO provision for implementing the requirement of § 57.601, a fully documented supporting analysis of the proposed program, and an evaluation of the consistency of the proposed program with the criteria listed in § 57.603. The application shall also specify:

(1) The design and substantive elements of the research and development program, including the expected amount of time required for their implementation;

(2) The annual expected capital, operating, and other costs of each element in the program;

(3) The smelter's current production processes, pollution control equip-

ment, and emissions which are likely to be affected by the program;

(4) Potential or expected benefits of the program;

(5) The basis upon which the results of the program will be evaluated; and

(6) The names, positions, and qualifications of the individuals responsible for conducting and supervising the project.

(b) *EPA approval.* If the issuing agency will not be EPA, the smelter owner shall also submit to EPA the information specified in paragraph (a) of this section at the same time it submits that information to the issuing agency. Within sixty days of the receipt of the information described in paragraph (a), EPA shall certify to the issuing agency and to the applicant whether or not in the judgment of the Administrator the smelter owner's final proposals are approvable.

(c) *Optional preproposal.* The smelter owner may, at his option, submit to EPA for its approval and comment a preproposal generally describing the project the owner intends to propose under paragraph (a) of this section. A preproposal may be submitted to EPA at any time prior to the submission of a proposal under paragraph (a) of this section. Within twenty-one days of the receipt of a preproposal, EPA shall certify to the applicant (and to any other issuing agency, as applicable) whether or not the project would be approvable. This certification may include comments indicating necessary modifications which would make the project approvable.

§ 57.603 Criteria for approval.

The approvability of any proposed research and development program shall be judged primarily according to the following criteria:

(a) The likelihood that the project will result in the use of more effective means of emission limitation by the smelter within a reasonable period of time;

(b) Whether the proposed funding and staffing of the project appear adequate for its successful completion;

(c) Whether the proposed level of funding for the project is consistent with the research and development expenditure levels found in other industries;

(d) The potential that the project may yield industrywide pollution control benefits;

(e) Whether the project may also improve control of other pollutants of both occupational and environmental significance;

(f) The potential effects of the project on energy conservation; and

(g) Other non-air quality health and environmental considerations.

§ 57.604 Evaluation of projects.

In any case where the proposed research and development project is to be conducted wholly by the smelter owner, the owner's proposal shall include a provision for the employment of a qualified independent engineering firm to evaluate and prepare written reports on each completed significant stage of the program written reports on each completed significant stage of the program conducted wholly or in part by the smelter owner. In any other case, the proposal shall contain a provision for the preparation of such reports by the person conducting any portion of the project. All reports required by this paragraph shall be submitted to EPA and also to the issuing agency if it is not EPA.

§ 57.605 Consent.

Each NSO shall incorporate by reference a binding written consent, signed by a corporate official impowered to do so, requiring the smelter owner to:

(a) Carry out the approved research and development program;

(b) Grant each issuing agency and their contractors access to any information or data employed or generated in the research and development program, including any process, emissions, or financial records which such agency determines are needed to evaluate the technical or economic merits of the program;

(c) Grant physical access to representatives and contractors of each issuing agency to each facility at which such research is conducted;

(d) Grant the representatives and contractors of EPA and the issuing agency reasonable access to the persons conducting the program on behalf of the smelter owner for discussions of progress, interpretation of data and results, and any other similar purposes as deemed necessary by any issuing agency.

§ 57.606 Confidentiality.

The provisions of section 114 of the Act and 40 CFR Part 2 shall govern the confidentiality of any data or information provided to EPA under this subpart.

Subpart G—Compliance Schedule Requirements

§ 57.701 General requirements.

Each NSO shall require the smelter owner to meet all of the requirements of the NSO as expeditiously as practicable. All NSO requirements shall be immediately effective, except to the extent that the owner is able to demonstrate the necessity for additional time. For requirements not immediately effective, the NSO shall provide increments of progress and schedules for compliance. The schedules set forth in this subpart do not represent the most expeditious compliance practicable for any but those smelters which do not currently have the equipment or systems required by this part.

§ 57.702 Compliance with constant control emission limitation.

Where necessary, each NSO shall require the smelter owner to submit to the issuing agency, within 30 days of the effective date of the NSO, a proposed schedule for compliance with the requirements of Subpart C. No final compliance date shall extend beyond 14 months of the effective date of the NSO, except for a smelter having no constant controls installed at the effective date. The schedule shall include the following increments of progress:

(a) The date by which contracts will be let or purchase orders issued to accomplish any necessary performance improvements;

(b) The date for initiating on-site construction or installation of necessary equipment;

(c) The date by which on-site construction or installation of equipment is to be completed;

(d) The date for achievement of final compliance with emission limitations.

§ 57.703 Compliance with the supplementary control system requirements.

(a) *Operation of existing SCS.* Each NSO shall require the immediate operation of any existing supplementary control system and the assumption of liability for violations of the NAAQS at existing monitor sites.

(b) *Compliance schedule where no SCS exists.* Where necessary, the NSO shall also require compliance with the requirements of Subpart D to be achieved according to the following schedule:

(1) Within 6 months after issuance of the NSO the smelter shall install all operating elements of the system, begin operating the system, complete all other measures specified in its approved SCS development plan, and begin compliance with the requirements of § 57.404.

(2) Within 9 months thereafter the smelter shall submit the SCS Report, assume liability for all violations of the NAAQS within its designated liability area, and comply with all other requirements of Subpart D.

§ 57.704 Compliance with fugitive emission evaluation and control requirements.

(a) *Plan for fugitive emission control.* The NSO shall provide that within 60 days after the submission of the report on the fugitive emission control study required by § 57.502(b), the smelter owner shall submit to the

issuing agency for its approval a proposed fugitive emission control plan for compliance with the requirements of §§ 57.501 and 57.503.

(b) *SCS Report.* If the fugitive emission control plan submitted under paragraph (a) of this section proposes to meet the requirements of §§ 57.501 and 57.503 through the additional use of a supplementary control system, the plan shall demonstrate that the use of supplementary controls at that smelter to prevent violations of the NAAQS resulting from fugitive emissions is practicable adequate, reliable, and enforceable. The plan shall also provide that within four months of the issuing agency's approval of the plan, an additional SCS report shall be submitted for the approval of the issuing agency under § 57.405(b)(2) (the SCS report) of this part describing the system to be used to meet the requirements of § 57.501 (general requirements) and § 57.503(a) (fugitive control through use of SCS). That report need not contain a 3-month study as described in § 57.405(b)(2)(iii).

(c) *Schedule for fugitive control through engineering techniques.* If the plan submitted under paragraph (a) of this section proposes to meet the requirement of §§ 57.501 through the use of engineering techniques to prevent the escape of fugitive emissions at low elevations, the proposed increments of progress for the installation and operation of those measures shall be submitted for the issuing agency's approval within 60 days of the approval of the plan by EPA. Those increments of progress shall not exceed the following:

(1) 30 days after the effective date of the NSO, the smelter shall let contracts or issue purchase orders for construction and installation of necessary equipment.

(2) Within four months thereafter, the smelter shall initiate on-site construction or installation.

(3) Within four months thereafter the smelter shall achieve final compliance with the requirements of § 57.501.

(d) *NSO amendment.* The amendments of the NSO required under § 57.503 shall be effected by the issuing agency as follows:

(1) With respect to the additional use of SCS, upon approval or promulgation of the plan submitted under paragraph (a) of this section and upon approval or promulgation of the requirements for the system described in the additional SCS Report under paragraph (b) of this section;

(2) With respect to the additional use of engineering techniques, upon approval or promulgation of the compliance schedule required by paragraph (c) of this section.

Subpart H—Waiver of Interim Requirement for use of Continuous Emission Reduction Technology

§ 57.801 Purpose and scope.

(a) This subpart shall govern all proceedings for the waiver of the interim requirement that each NSO provide for the use of constant controls.

(b) In the absence of specific provisions in this subpart, and where appropriate, questions arising at any stage of the proceeding shall be resolved at the discretion of the Presiding Officer or the Administrator, as appropriate.

§ 57.802 Request for waiver.

(a) *General.* (1) Each smelter owner requesting a waiver shall complete, sign and submit Appendix A to this part. Copies of Appendix A may be obtained from any EPA Regional Administrator, or from the Director, Division of Stationary Source Enforcement (EN-341), United States Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460. Claims of confidentiality shall be made as provided in § 57.203.

(2) The smelter owner shall append to the completed and signed Appendix A full copies of all documents, test results, studies, reports, scientific literature and assessments required by Appendix A. To the extent that the material consists of generally available published material, the smelter owner may cite to the material in lieu of appending it to Appendix A. The smelter owner shall specifically designate those portions of any documents relied upon and the facts or conclusions in Appendix A to which they relate.

(b) *Effect of submitting incomplete application.* (1) The Administrator, or a person designated by him to review applications for waivers, may advise the smelter owner in writing whenever he determines that additional information is needed in order to make the waiver eligibility determinations required by section 119(d)(2) of the Act. The smelter owner shall promptly supply such information. All additional information requested under this paragraph and filed in the manner required by paragraph (d) shall be deemed part of Appendix A.

(2) Failure to comply with the requirements of paragraphs (a) and (b)(1) of this section shall be grounds for denial of the requested waiver.

(c) *Time for requesting waivers.* Any request for a waiver must be submitted to the Administrator by the smelter owner at the time of the initial application for an NSO from the State or the Administrator, as the case may be.

(d) *Submission of request.* Two copies of Appendix A (plus attachments) shall be filed with the Administrator, addressed as follows:

Director, Division of Stationary Source Enforcement (EN-341), U.S. Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460, Attn: Confidential Information Unit.

(e) *Eligibility.* No smelter shall be eligible for consideration under this subpart unless no constant controls were installed at that smelter as of August 7, 1977.

(f) *Criteria for Decision.* The Administrator shall recommend that a waiver be granted for any eligible smelter as to which he finds, in accordance with the methods and procedures specified in Appendix A, that:

(1) The sum of the present value of the smelter's future net cash flow (after installation of interim constant control equipment) plus its terminal value would be less than the smelter's liquidation (salvage) value; or

(2) The smelter's average variable costs at all relevant levels of production (after installation of interim constant control equipment) would exceed the weighted average price of smelter output for one year or more.

§ 57.803 Issuance of tentative determination; notice.

(a) *Tentative determination.* (1) The EPA staff shall formulate and prepare:

(i) A "Staff Computational Analysis," using the financial information submitted by the smelter owner under § 57.802 to evaluate the economic circumstances of the smelter for which the waiver is sought;

(ii) A tentative determination as to whether an interim requirement for the use of constant controls would be so costly as to necessitate permanent or prolonged temporary cessation of operations at the smelter for which the waiver is requested. The tentative determination shall contain a "Proposed Report and Findings" summarizing the conclusions reached in the Staff Computational Analysis, discussing the estimated cost of interim controls, and assessing the effect upon the smelter of requiring those controls. The tentative determination shall also contain a proposed recommendation that the waiver be granted or denied, based upon the Proposed Report and Findings, and stating any additional considerations supporting the proposed recommendation. This tentative determination shall be a public document.

(2) In preparing the Proposed Report and Findings, the EPA staff shall attempt to the maximum extent feasible to avoid revealing confidential information which, if revealed, might damage the legitimate business interests of the applicant. The preceding sentence notwithstanding, the tentative determination shall be accompanied by a listing of all materials con-

sidered by EPA staff in developing the tentative determination. Subject to the provisions of § 57.814(a), full copies of all such materials shall be included in the administrative record under § 57.814, except that, to the extent the material consists of published material which is generally available, full citations to that material may be given instead.

(b) *Public notice.* Public notice of EPA's tentative determination to grant or deny an application for a waiver shall be given by:

(1) Publication at least once in a daily newspaper of general circulation in the area in which the smelter owner is located; and

(2) Posting in the principal office of the municipality in which the smelter owner is located.

(c) *Individual notice.* Individual notice of EPA's tentative determination to grant or deny an application for a waiver shall be mailed to the smelter owner by certified mail, return receipt requested, and to the air pollution control agency for the State in which the smelter is located.

(d) *Request for individual notice.* EPA shall mail notice of its tentative determination to grant or deny an application for waiver to any person upon request. Each such request shall be submitted to the Administrator in writing, shall state that the request is for individual notice of tentative determination to grant or deny any application for a waiver under section 119(d) of the Clean Air Act, and shall describe the notice or types of notices desired (*e.g.*, all notices, notices for a particular Region, notices for a particular State, notice for a particular city).

(e) *Form of notice.* The notice of tentative determination required to be distributed under paragraphs (b), (c), and (d) of this section shall include, in addition to any other materials, the following:

(1) A summary of the information contained in Appendix A;

(2) The tentative determination prepared under paragraph (a) of this section: *Provided*, That, except in the case of the smelter owner, a summary of the basis for the grant or denial of the waiver may be provided in lieu of the formal determinations required by paragraph (a)(1) of this section;

(3) A brief description of the procedures set forth in § 57.804 for requesting a public hearing on the waiver request, including a statement that such request must be filed within 30 days of the date of the notice;

(4) A statement that written comments on the tentative determination submitted to EPA within 60 days of the date of the notice will be considered by EPA in making a final decision on the application; and

(5) The location of the administrative record and the location at which interested persons may obtain further information on the tentative determination, including a copy of the index to the record, the tentative determination prepared under paragaph (a) of this section, and any other non-confidential record materials.

§ 57.804 Request for hearing; request to participate in hearing.

(a) *Request for hearing.* Within 30 days of the date of publication or receipt of the notice required by § 57.803, any person may request the Administrator to hold a hearing on the tentative determination by submitting a written request containing the following:

(1) Identification of the person requesting the hearing and his interest in the proceeding;

(2) A statement of any objections to the tentative determination; and

(3) A statement of the issues which such person proposes to raise for consideration at such hearing.

(b) *Grant or denial of hearing; notification.* Whenever (1) the Administrator has received a written request satisfying the requirements of paragraph (a) of this section which presents genuine issues as to the effect on the smelter of the requirement for use of constant controls, or (2) the Administrator determines in his discretion that a hearing is necessary or appropriate, the Administrator shall give written notice of his determination to each person requesting such hearing and the smelter owner, and shall provide public notice of his determination in accordance with § 57.803(b). If the Administrator determines that a request filed under paragaph (a) of this section does not comply with the requirements of paragraph (a) or does not present genuine issues, he shall give written notice of his decision to deny a hearing to the person requesting the hearing.

(c) *Form of notice of hearing.* Each notice of hearing disseminated under paragraph (b) of this section shall contain:

(1) A statement of the time and place of the hearing;

(2) A statement identifying the place at which the official record on the application for waiver is located, the hours during which it will be open for public inspection, and the documents contained in the record as of the date of the notice of hearing;

(3) The due date for filing a written request to participate in the hearing under paragraph (d) of this section;

(4) The due date for making written submissions under § 57.805; and

(5) The name, address, and office telephone number of the Hearing Clerk for the hearing.

(d) *Request to participate in hearing.* Each person desiring to participate in any hearing granted under this section, including any person requesting such a hearing, shall file a written request to participate with the Hearing Clerk by the deadline set forth in the notice of hearing. The request shall include:

(1) A brief statement of the interest of the person in the proceeding;

(2) A brief outline of the points to be addressed;

(3) An estimate of the time required; and

(4) If the request is submitted by an organization, a nonbinding list of the persons to take part in the presentation. As soon as practicable, but in no event later than two weeks before the scheduled date of the hearing, the Hearing Clerk shall make available to the public and shall mail to each person who asked to participate in the hearing a hearing schedule.

(e) *Effect of denial of or absence of request for hearing.* If no request for a hearing is made under this section, or if all such requests are denied under paragraph (b) of this section, the tentative determination issued under § 57.803 shall be treated procedurally as if it were a recommended decision issued under § 57.811(b)(2) of this subpart, except that for purposes of §§ 57.812 and 57.813 the term "hearing participant" shall be construed to mean the smelter owner and any person who submitted comments under § 57.803(e)(4).

§ 57.805 Submission of written comments on tentative determination.

(a) *Main comments.* Each person who has filed a request to participate in the hearing shall file with the Hearing Clerk no later than 30 days before the scheduled start of the hearing (or such other date as may be set forth in the notice of hearing) any comments which he has on the request for waiver and EPA's tentative determination, based on information which is or reasonably could have been available to that person at the time.

(b) *Reply comments.* Not later than two weeks after a full transcript of the hearing becomes available (or such other date as may be set forth in the notice of hearing), each person who has filed a request to participate in the hearing shall file with the Hearing Clerk any comments he may have on:

(1) Written comments submitted by other participants pursuant to paragraph (a) of this section;

(2) Written comments submitted in response to the notice of hearing;

(3) Material in the hearing record; and

(4) Material which was not and could not reasonably have been available prior to the deadline for submis-

sion of main comments under paragraph (a) of this section.

(c) *Form of comments.* All comments should be submitted in quadruplicate and shall include any affidavits, studies, tests or other materials relied upon for making any factual statements in the comments.

(d) *Use of comments.* (1) Written comments filed under this section shall constitute the bulk of the evidence submitted at the hearing. Oral statements at the hearing should be brief, and restricted either to points that could not have been made in written comments, or to emphasizing points which are made in the comments, but which the participant believes can be more forcefully urged in the hearing context.

(2) Notwithstanding the foregoing, within two weeks prior to either deadline specified by paragraph (a) of this section for the filing of main comments, any person who has filed a request to participate in the hearing may file a request with the Presiding Officer to submit all or part of his main comments orally at the hearing in lieu of submitting written comments. The Presiding Officer shall, within one week, grant such request if he finds that such person will be prejudiced if he is required to submit such comments in written form.

§ 57.806 Presiding officer.

(a) *Assignment of Presiding Officer.* (1) The Administrator shall, as soon as practicable after the granting of a request for hearing under § 57.803:

(i) Appoint a Presiding Officer to chair the hearing panel, who shall be either the Assistant Administrator for Air and Waste Management or the Assistant Administrator for Enforcement; or

(ii) Request that the Chief Administrative Law Judge assign an Administrative Law Judge as Presiding Officer. The Chief Administrative Law Judge shall thereupon make the assignment.

(2) If all parties to the hearing waive their right to have the Agency or an Administrative Law Judge preside at the hearing, the Administrator shall appoint an EPA employee having the qualifications of a Judicial Officer as defined in § 57.103 to serve as Presiding Officer.

(b) *Powers and duties of Presiding Officer.* It shall be the duty of the Presiding Officer to conduct a fair and impartial hearing, assure that the facts are fully elicited, and avoid delay. The Presiding Officer shall have authority to:

(1) Chair and conduct administrative hearings held under this subpart;

(2) Administer oaths and affirmations;

(3) Receive relevant evidence: *Provided,* That the administrative record, as defined in § 57.814, shall be received in evidence;

(4) Consider and rule upon motions, dispose of procedural requests, and issue all necessary orders;

(5) Hold conferences for the settlement or simplification of the issues or the expediting of the proceedings; and

(6) Do all other acts and take all measures necessary for the maintenance of order and for the efficient, fair and impartial conduct of proceedings under this subpart.

§ 57.807 Hearing.

(a) *Composition of hearing panel.* The Presiding Officer shall preside at the hearing held under this subpart. An EPA panel shall also take part in the hearing. In general, the membership of the panel shall consist of EPA employees having special expertise in areas related to the issues to be addressed at the hearing, including economists and engineers. For this reason, the membership of the panel may change as different issues are presented for discussion.

(b) *Additional hearing participants.* Either before or during the hearing, the Presiding Officer, after consultation with the panel, may request that a person not then scheduled to participate in the hearing (including an EPA employee or a person identified by any scheduled hearing participant as having knowledge concerning the issues raised for discussion at the hearing) make a presentation or make himself available for cross-examination at the hearing.

(c) *Questioning of hearing participants.* The panel members may question any person participating in the hearing. Cross-examination by persons other than panel members shall not be permitted at this stage of the proceeding except where the Presiding Officer determines, after consultation with the panel, that circumstances compel such cross-examination. However, persons in the hearing audience, including other hearing participants, may submit written questions to the Presiding Officer for the Presiding Officer to ask the participants, and the Presiding Officer may, after consultation with the panel, and in his sole discretion, ask these questions.

(d) *Submission of additional material.* Participants in the hearing shall submit for the hearing record such additional material as the hearing panel may request within 10 days following the close of the hearing, or such other period of time as is ordered by the Presiding Officer. Participants may also submit additional information for the hearing record on their own accord within 10 days after the close of the hearing.

(e) *Transcript.* A verbatim transcript shall be made of the hearing.

§ 57.808 Opportunity for cross-examination.

(a) *Request for cross-examination.* After the close of the panel hearing conducted under this part, any participant in that hearing may submit a written request for cross-examination. The request shall be received by EPA within one week after a full transcript of the hearing becomes available and shall specify:

(1) The disputed issue(s) of material fact as to which cross-examination is requested. This shall include an explanation of why the questions at issue are factual, rather than of an analytical or policy nature; the extent to which they are in dispute in the light of the record made thus far; and the extent to which and why they can reasonably be considered material to the decision on the application for a waiver; and

(2) The person(s) the participant desires to cross-examine, and an estimate of the time necessary. This shall include a statement as to why the cross-examination requested can be expected to result in full and true disclosure resolving the issue of material fact involved. (b) *Order granting or denying request for cross-examination.* As expeditiously as practicable after receipt of all requests for cross-examination under paragraph (a) of this section, the Presiding Officer, after consultation with the hearing panel, shall issue an order either granting or denying each such request, which shall be disseminated to all persons requesting cross-examination and all persons to be cross-examined. If any request for cross-examination is granted, the order shall specify:

(1) The issues as to which cross-examination is granted;

(2) The persons to be cross-examined on each issue;

(3) The persons allowed to conduct cross-examination;

(4) Time limits for the examination of witnesses; and

(5) The date, time and place of the supplementary hearing at which cross-examination shall take place. In issuing this ruling, the Presiding Officer may determine that one or more participants have the same or similar interests and that to prevent unduly repetitious cross-examination, they should be required to choose a single representative for purposes of cross-examination. In such a case, the order shall simply assign time for cross-examination by that single representative without identifying the representative further.

(c) *Supplementary hearing.* The Presiding Officer and at least one member of the original hearing panel shall preside at the supplementary hearing. During the course of the hearing, the Presiding Officer shall have authority

to modify any order issued under paragraph (b) of this section. A verbatim transcript shall be made of this hearing.

(d) *Alternatives to cross-examination.* (1) No later than the time set for requesting cross-examination, a hearing participant may request that alternative methods of clarifying the record (such as the submittal of additional written information) be used in lieu of or in addition to cross-examination. The Presiding Officer shall issue an order granting or denying such request at the time he issues (or would have issued) an order under paragraph (b) of this section. If the request is granted, the order shall specify the alternative provided and any other relevant information (*e.g.*, the due date for submitting written information).

(2) In passing on any request for cross-examination submitted under paragraph (a) of this section, the Presiding Officer may, as a precondition to ruling on the merits of such request, require that alternative means of clarifying the record be used whether or not a request to do so has been made under the preceding paragraph. The person requesting cross-examination shall have one week to comment on the results of utilizing such alternative means, following which the Presiding Officer, as soon as practicable, shall issue an order granting or denying such person's request for cross-examination.

§ 57.809 Ex parte contacts.

(a) *General.* (1) At no time after issuance of the tentative determination shall the Administrator, Presiding Officer, or other employee who is or may reasonably be expected to be involved in making a decision on the application for waiver submitted under this part discuss ex parte the merits of proceedings with the smelter owner or any other person outside the Agency or his representative who has filed written comments on the application or tentative determination, requested a hearing, requested to participate in a hearing or participated in a hearing on such application.

(2) Notwithstanding the foregoing, the Administrator, Presiding Officer, or other employee who is or may reasonably be expected to be involved in the decisional process may discuss the merits of the proceedings with any person identified in paragraph (a) of this section if all participants in the proceedings, or their representatives, have been given reasonable notice and opportunity to be present.

(b) *Written communications.* During the pendency of the proceeding, any memorandum or other communication by or on behalf of the smelter owner or any hearing participant addressed to the Administrator, Presiding Officer, or other employee who is or may reasonably be expected to be involved in making a decision on the application for waiver, and relating to the merits thereof, shall be regarded as argument made in the proceeding and shall be served on the smelter owner and all other hearing participants.

(c) *Effect of receipt of ex parte communication.* (1) If the Administrator, Presiding Officer, or other employee who is or may reasonably be expected to be involved in making a decision on the application for waiver receives, or makes or knowingly causes to be made, an oral or written ex parte communication, he shall place in the record:

(i) The written communication, if any;

(ii) A memorandum stating the substance of any oral communication; and

(iii) All written responses and memoranda stating the substance of all oral responses to the materials in paragraph (c) (1) and (2) of this section.

(2) Upon receipt of a communication from a smelter owner, hearing participant, or other interested person outside the Agency, in violation of paragraphs (a) and (b) of this section, the Administrator or Presiding Officer may, to the extent consistent with the interests of justice and the policy of the Act, require such person to show cause why his application, claim or interest in the proceeding should not be dismissed, denied, disregarded, or otherwise adversely affected on account of such violation.

§ 57.810 Filing of briefs, proposed findings, and proposed recommendations.

Unless otherwise ordered by the Presiding Officer, each hearing participant may, within 20 days after reply comments are submitted under § 57.805(b), or if a supplemental hearing for the purpose of cross-examination has been held under § 57.808(c), within 20 days after the transcript of such supplemental hearing becomes available, or if alternative methods of clarifying the record have been used under § 57.808(d), within 20 days after the alternative methods have been employed, file with the Hearing Clerk and serve upon all other hearing participants proposed findings and proposed recommendations to replace in whole or in part the findings and recommendations contained in the tentative determination. Any such person may also file, at the same time, a brief in support of his proposals, together with references to relevant pages of transcript and to relevant exhibits. Within 10 days thereafter each participant may file a reply brief concerning alternative proposals. Oral argument may be held at the discretion of the Presiding Officer on motion of any hearing participant or sua sponte.

§ 57.811 Recommended decision.

As soon as practicable after the conclusion of the hearing, one or more responsible employees of the Agency shall evaluate the record for preparation of recommended decision and shall prepare and file a recommended decision with the Hearing Clerk. The employee(s) preparing the decision will generally be members of the hearing panel and may include the Presiding Officer. Such employee(s) may consult with and receive assistance from any member of the hearing panel in drafting a recommended decision and may also delegate the preparation of the recommended decision to the panel or to any member or members of it. This decision shall contain the same elements as the tentative determination. After the recommended decision has been filed, the Hearing Clerk shall serve a copy of such decision on each hearing participant and upon the Administrator.

§ 57.812 Appeal from or review of recommended decision.

(a) *Exceptions.* (1) Within 20 days after service of the recommended decision, any hearing participant may take exception to any matter set forth in such decision or to any adverse order or ruling of the Presiding Officer prior to or during the hearing to which such participant objected, and may appeal such exceptions to the Administrator by filing them in writing with the Hearing Clerk. Such exceptions shall contain alternative findings and recommendations, together with references to the relevant pages of the record and recommended decision. A copy of each document taking exception to the recommended decision shall be served upon every other hearing participant. Within the same period of time each party filing exceptions shall file with the Administrator and shall serve upon all hearing participants a brief concerning each of the exceptions being appealed. Each brief shall include page references to the relevant portions of the record and to the recommended decision.

(2) Within 10 days of the service of exceptions and briefs under paragraph (a)(1) of this section, any hearing participant may file and serve a reply brief responding to exceptions or arguments raised by any other hearing participant together with references to the relevant portions of the record, recommended decision, or opposing brief. Reply briefs shall not, however, raise additional exceptions.

(b) *Sua sponte review by the Administrator.* Whenever the Administrator determines sua sponte to review a recommended decision, notice of such intention shall be served upon the parties by the Hearing Clerk within 30 days after the date of service of the

recommended decision. Such notice shall include a statement of issues to be briefed by the hearing participants and a time schedule for the service and filing of briefs.

(c) *Scope of appeal or review.* The appeal of the recommended decision shall be limited to the issues raised by the appellant, except when the Administrator determines that additional issues should be briefed or argued. If the Administrator determines that briefing or argument of additional issues is warranted, all hearing participants shall be given reasonable written notice of such determination to permit preparation of adequate argument.

(d) *Argument before the Administrator.* The Administrator may, upon request by a party or sua sponte, set a matter for oral argument. The time and place for such oral argument shall be assigned after giving consideration to the convenience of the parties.

§ 57.813 Final decision.

(a) *After review.* As soon as practicable after all appeal or other review proceedings have been completed, the Administrator shall issue his final decision. Such a final decision shall include the same elements as the recommended decision, as well as any additional reasons supporting his decisions on exceptions filed by hearing participants. The final decision may accept or reject all or part of the recommended decision. The Administrator may consult with the Presiding Officer, members of the hearing panel or any other EPA employee in preparing his final decision. The Hearing Clerk shall file a copy of the decision on all hearing participants.

(b) *In the absence of review.* If no party appeals a recommended decision to the Administrator and if the Administrator does not review it sua sponte, he shall be deemed to have adopted the recommended decision as the final decision of the Agency upon the expiration of the time for filing any exceptions under § 57.812(a).

§ 57.814 Administrative record.

(a) *Establishment of record.* (1) Upon receipt of request for a waiver, an administrative record for that request shall be established, and a Record and Hearing Clerk appointed to supervise the filing of documents in the record and to carry out all other duties assigned to him under this subpart.

(2) All material required to be included in the record shall be a added to the record as soon as feasible after its receipt by EPA. All material in the record shall be appropriately indexed. The Hearing Clerk shall make appropriate arragnements to allow members of the public to copy all nonconfidential record materials during normal EPA business hours.

(3) Confidential record material shall be indexed under paragraph (a)(2) of this section. Confidential record material shall, however, be physically maintained in a separate location from public record material.

(4) Confidential record material shall consist of the following:

(i) Any material submitted pursuant to § 57.802 for which a proper claim of confidentiality has been made under section 114(c) of the Act and 40 CFR Part 2; and

(ii) The Staff Computational Analysis prepared under § 57.803.

(b) *Record for issuing tentative determination.* The administrative record for issuing the tentative determination required by § 57.803 shall consist of the material submitted under § 57.802 and any additional materials supporting the tentative determination.

Record for acting on requests for cross-examination. The administrative record for acting on requests for cross-examination under § 57.808 shall consist of the record for issuing the tentative determination, all comments timely submitted under section §§ 57.803(e)(4) and 57.805, the transcript of the hearing, and any additional material timely submitted under §57.807(d).

(d) *Record for preparation of recommended decision.* The administrative record for preparation of the recommended decision required by § 57.811 shall consist of the record for acting on requests for cross-examination, the transcript of any supplementary hearing held under §57.808(c), any materials timely submitted in lieu of or in addition to cross-examination under 57.808(d), and all briefs, proposed findings of fact and proposed recommendations timely submitted under § 57.810.

(e) *Record for issuance of final decision.* (1) Where no hearing has been held, the administrative record for issuance of the Administrator's final decision shall consist of the record for issuing the tentative determination, any comments timely submitted under § 57.803(e)(4), any briefs or reply briefs timely submitted under § 57.812(a) through (c), and the transcript of any oral argument granted under § 57.812(d).

(2) Where a hearing has been held, the administrative record for issuance of the Administrator's final decision shall consist of the record for preparation of the recommended decision, any briefs or reply briefs submitted under § 57.812(a) through (c), and the transcript of any oral argument granted under § 57.812(d).

§ 57.815 State notification.

The Administrator shall give notice of the final decision in writing to the air pollution control agency of the State in which the smelter is located.

§ 57.816 Effect of negative recommendation.

No waiver of the interim requirement for the use of constant controls shall be granted by the Administrator or a State in the absence of a positive recommendation by the Administrator that such a waiver be granted.

APPENDIX A—PRIMARY NONFERROUS SMELTER ORDER (NSO) APPLICATION

INSTRUCTIONS

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1. *General Instructions*

1.1 *Purpose of the Application*

This application provides financial reporting schedules and the accompanying instructions for requesting a nonferrous smelter order (NSO). In order to support an NSO request, the applicant must submit operating and financial data specified by the schedules included in this application. Specific instructions for completing each schedule are provided in subsequent sections of the instructions. In general, applicants must provide:

(a) Annual consolidated income statements, balance sheets and supporting data covering the five most recent fiscal years of

operations by the firm controlling a smelter for which the NSO is requested.

(b) A classification of the firm's consolidated financial data into segmented financial reporting summaries that will provide appropriate financial performance indicators by individual operating entity for the firm's mines, concerntrators, smelters, refineries and associated nonferrous operating activities.

(c) Respective "base-case" and adjusted "controls-case" forecasts of operating revenues, operating costs, net income from operations and capital investments for the firm's smelter operations. The "base-case" forecast shall be prepared in terms of anticipated smelter operations without the installation of additional pollution control facilities and the "controls-case" forecast on the basis of anticipated smelter operations after installing additional pollution control facilites required to comply with the smelter's SIP emission limitations.

1.2 *NSO Economic Capability Tests*

Eligibility for an NSO or for a waiver of the interim constant control requirement will be evaluated by the following tests of an applicant's economic capability to undertake additional pollution control expenditures. The test for NSO eligibility employs a present value approach for determining an applicant's economic capability to implement a system of constant control technology that will achieve full compliance with SIP emission limitations. The tests for the waiver of the interim constant control requirements employ variable costing and discounted cash flow standards for evaluating an applicant's economic capability to implement those requirements. The period of analysis for these tests shall be 1979 through 1985, inclusive.

1.2.1 *Net Income Test.* Each applicant must establish that the firm is not economically capable of implementing a system of constant control technology that will achieve full compliance with SIP emission limitation standards.

Inadequate ecomomic capability is defined in this test as an inability to undertake the required installation of new, or modification to existing, constant control facilities without reducing the present value of the smelters net income and terminal value below the smelter's current salvage value under an orderly plan of liquidation.

1.2.2 *Temporary Waiver from Interim Controls.* Applicants that do not have an existing constant controls system may apply for a waiver from requirements for the interim controls. Applicants will be eligible for a temporary waiver from the interim constant control if they can establish pursuant to the reporting procedures in this application that the imposition of such control requirements would economically necessitate closure of the smelter facility for a period of one year or longer. The economic justification for a non-permanent closure under this temporary waiver test is defined as a situation in which the smelter's projected operating revenues for one or more years within the forecast period are inadequate to cover variable operating costs anticipated after installing the required interim control technology. Temporary waivers will be granted for only the period of time over which applicants can establish an inability by the firm to cover its variable operating costs. Interim-control waiver requests based on the smelter's projected inability to earn adequate net income after installation of interim pollution control equipment will be subject to the following "permanent waiver" test.

1.2.3 *Permanent Waiver from Interim Controls.* Applicants without an existing constant controls system will be eligible for a full waiver from the interim use of such controls if they can establish pursuant to the reporting procedure in this application that an imposition of interim control requirements would necessitate permanent closure of the smelter. Economic justification for a permanent closure is defined as a situation in which the present value of future cash flows anticipated from the smelter after installing the required interim control technology are less than the smelter's current salvage value under an orderly plan of liquidation.

1.2.4 *EPA Contact for NSO Inquiries.* Inquiries concerning this portion of the requirements for NSO application should be addressed to: Judith Larsen, Environmental Protection Agency, EN 341, 401 M Street, S.W., Washington D.C. 20460.

1.2.5 *Certification.* The NSO Certification Statement must be signed by an authorized officer of the applicant firm.

1.3 *Confidentiality*

Applicants may request that information contained in this application be treated as confidential. Agency regulations concerning claims of confidentiality of business information are contained in 40 CFR Part 2, Subpart B (41 FR 36902 *et. seq.*, September 1, 1976, as amended by 43 FR 39997 *et. seq.*, September 8, 1978). The regulations provide that a business may, if it desires, assert a business confidentiality claim covering part or all of the information furnished to EPA. The claim must be made at the same time the applicable information is submitted. The manner of asserting such claims is specified in 40 CFR 2.203(b). Information covered by such a claim will be handled by the Agency in accordance with procedures set forth in the Subpart B regulations. No information will be disclosed by EPA as to which a claim of confidentiality has been made except to the extent of and in accordance with 40 CFR Part 2, Subpart B. However, if no claim of confidentiality is made when information is furnished to EPA, the information may be made available to he public without notice to the business.

1.4 *Data Entry*

1.4.1 *Rounding.* All amounts (including both dollar values and physical units) reported in the schedules and exhibits accompanying this application must be rounded to the nearest thousand and expressed in thousands of dollars or units unless otherwise indicated in the instructions.

1.4.2 *Estimates.* Where an applicant's records cannot produce the specific data required by this application, the use of estimates will be allowed if a meaningful estimate can be made without significant distortion of the reported results. Data estimates must be supported by attaching on a separate sheet of paper as part of Exhibit B an explanation identifying where such estimates are used and showing explicitly how the estimates were made.

1.4.3 *Missing Data.* Applicants must provide, where applicable, all operating and financial data requested by this application. Only substantially complete applications can be accepted for processing by the Agency. Questions concerning data entries for which information is not provided by, or cannot reasonably be estimated from, the applicant's existing accounting records should be addressed to the EPA Contact for NSO Inquiries.

1.5 *Use of Exhibits*

In addition to data required by the schedules included in this application, the following information must be attached as exhibits.

1.5.1 *Exhibit A.* Background information on the firm's organizational structure and its associated accounting and financial reporting systems for primary nonferrous activities. This information should include, where applicable, the firm's:

(a) Operating association with and ownership control in consolidated subsidiaries, unconsolidated subsidiaries, joint ventures and other affiliated companies.

(b) Organizational subdivision of its primary nonferrous activities into profit centers, cost centers and/or related financial reporting entities employed to control the operation of its mines, concentrators, smelters, refineries and other associated facilities.

(c) Material and product flows among the smelter subject to this NSO application, other integrated facilities and its affiliated suppliers and/or customers. In the case of integrated facilities, applicants should provide process flow diagrams depiciting the operating interrelationships among its mines, concentrators, smelters, refineries and other integrated facilities. For both integrated and nonintegrated facilities, applicants also should describe the proportion contributed to its primary nonferrous activities by material purchases from and product sales to affiliated suppliers and customers.

(d) Annual operating capacity over the five most recent fiscal years for its smelter and associated nonferrous facilities. Operating capacity should be defined in terms of the total quantity of throughput that could have been processed with the available facilities after giving appropriate allowance to normal downtime requirements for maintenance and repairs. Operating capacity data also should consider both capacity balancing requirements among processing steps and annual processing yield rates attainable for each facility.

(e) Weighted average analysis of concentrates processed and tonnage produced annually over each of the five most recent fiscal years by the smelter subject to this application. The operators of integrated facilities also should provide annual data over the five-year period on both the sources of and a weighted average analysis of concentrates and ores processed and tonnage produced by individual profit centers.

(f) Accounting system and policies for recording investment expenditures, operating revenues, operating costs and income taxes associated with its primary nonferrous activities. Applicants also should provide a complete description of allocation techniques employed for assigning investments, revenues, costs and taxes to individual profit, cost or departmental centers for which costs are accumulated. Applicants should further indicate the relationship of cost and/or departmental accounting entities to the firm's established profit centers.

(g) Component income (profit and loss), cash flow, balance sheet and other financial statements available for each existing profit center engaged in mining, concentrating, smelting, refining or further processing activities. Component financial statements should be provided on an annual basis over

the applicant's five most recent fiscal years. The statements should be prepared in conformity with generally accepted accounting principles and the data contained therein reconciled with the applicant's consolidated corporate financial statements.

(h) Annual and five-year operating and capital expenditure plans (or budgets) by individual nonferrous profit center. These documents should include previous plans prepared for the five preceding fiscal years as well as the currrent one-year and five-year operating and capital expenditure plans. At least the current one-year and five-year plans should provide a specific breakdown of investment expenditures and operating costs associated with the operation and maintenance of each profit center's existing and proposed pollution control facilities.

1.5.2 *Exhibit B.* Supplemental description and explanation of items appearing in the financial reporting schedules.

1.5.3 *Exhibit C.* Financial data documentation. Applicants must document annual balance sheet, income statement and supporting data reported for the firm's preceding five fiscal years or for that portion of the past five years during which the firm engaged in smelter operations. This documentation should be provided by attaching to the application:

(a) SEC 10-K reports filed by the parent corporation and its unconsolidated subsidiaries for each of the preceding five fiscal years.

(b) Certified financial statements prepared (a) on a consolidated basis for the parent corporation and its consolidated subsidiaries and (b) for the firm's unconsolidated subsidiaries and affiliates. This requirement may be omitted for those years in which SEC 10-K reports have been attached to this Exhibit.

(c) Business Segment Information reports filed with the Securities and Exchange Commission by the firm and its unconsolidated subsidiaries for each of the preceding five years (as available).

2. *NSO Financial Reporting Overview*

2.1 *Relation to Applicant's Accounting Principles.* In completing the NSO financial reporting schedules, applicants should follow the accounting principles used during each respective reporting period to prepare their annual certified financial statements. Applicants must attach as part of Exhibit B, a schedule identifying and explaining any differences in accounting principles applied to reporting in the NSO schedules, and in a firm's certified financial statements the investment expenditures, operating revenues, operating costs, income taxes and other financial transactions associated with the applicant's smelter operations.

2.2 *Transfer Prices on Affiliated Party Transactions.* Certain transactions by the smelter subject to an NSO application may reflect sales to or purchases from "affiliated" customers or suppliers with whom the smelter has a common bond of ownership and/or managerial control. In preparing this application, affiliated party transactions shall be defined as transactions with any entity that the firm, or its owners, controls directly or indirectly either through an ownership of 10 percent or more of the entity's voting interests or through an exercise of managerial responsibility. Applicants must attach as a part of Exhibit B supporting schedules explaining the pricing policies established on affiliated party transactions incorporated in the financial reporting schedules.

Prices on inter-segment material and product transfers within a firm, or on external purchases from and sales to other affiliated suppliers and customers, may differ from the prices on comparable transactions with unaffiliated suppliers and customers. In this event, applicants also should present in the Exhibit B supporting schedules and incorporate in the NSO financial reporting schedules, appropriate adjustments for restating affiliated party transactions. Affiliated party transactions should be restated at either (a) equivalent prices on comparable transactions with unaffiliated parties if such price quotations can be obtained or (b) prices that provide the selling entity with a normal profit margin above its cost of sales if a meaningful comparison with unaffiliated transaction prices cannot be established. A "normal" profit margin should be defined as the gross operating profit per dollar of operating revenue that will provide an after tax rate of return on permanent capital (long term assets less current liabilities) of no more than eight percent.

2.3 *Forecasting Requirements.* Applicants must provide the Agency with at least two sets of financial forecasts covering the period from calendar years 1979 through 1985. The first set of forecasts should be for a "base" case (Schedules D.1 and D.2) reflecting applicant expectations about future smelter operations if additional pollution control facilities are not required. The second set of forecasts should be prepared for an adjusted "controls" case (Schedules E.1 and E.2) reflecting applicant expectations about future smelter operations if additional constant controls are required to comply with SIP sulfur dioxide emission limitations.

Applicants requesting either a temporary or permanent waiver from interim constant control requirements also must provide an additional set of financial forecasts (Schedules F.1 and F.2) reflecting anticipated smelter operations with the installation of such controls.

It is recognized that some line items may be the same under both cases. On the other hand, production interruptions or curtailments due to the installation of additional pollution control facilities may require adjustments to certain revenue and cost estimates in the respective controls cases. The installation of additional pollution control facilities that involve process changes in the smelter's operations also may require specific forecasts by applicants of associated impacts on incremental operating revenues and costs.

Applicants should make their financial forecasts in terms of nominal dollar estimates. Forecasts of selected parameters provided by EPA will furnish guidelines to an applicant in preparing part of the required cost and revenue estimates. In particular, refined copper, zinc and lead price indices provided in nominal-dollar terms should be used directly by the applicant as given—i.e., the stipulated price estimates should not be inflated. In all cases applicants should disclose the index applied to their revenue and cost forecasts.

2.4 *EPA Furnished Forecast Data.* Projections for 1979 through 1985 to be provided by the Agency will include:

(a) Aggregate industry production of copper, lead and zinc

(b) Average capacity utilization factors for primary nonferrous metal producers

(c) Refined prices for copper, lead and zinc

(d) Energy price indices for natural gas, electricity, fuel oil, sulfur and coal

(e) Wage indices for manufacturing labor

(f) Gross National Product price deflator

(g) Weighted average cost of capital for nonferrous metal producers

The wage indices are to be used only to estimate wage increases after the expiration of an applicant's current labor agreements.

2.5 *Applicant Generated Forecasts.* Within the specified limitations, applicants may employ any reasonable method of forecasting by-product, co-product and other prices not provided by the Agency. The method selected should be explained and unit prices or costs provided where applicable. The forecast elements should be compatible with an applicant's historical cost and revenue elements to permit direct comparisons of historical and forecasted data. Applicants should attach as part of Exhibit B approriate schedules explaining variances between forecasted and historical unit costs for the smelter.

An acceptable method of forecasting by-product (e.g., gold and silver) prices would be to (a) compute an average of the 1978 constant-dollar equivalents to a by-product's 1974–1978 prices and (b) inflate the average price by the forecasted general rate of inflation for each successive year over the 1979–1986 forecast period. Similarly, concentrate prices could be estimated by applying forecasts of the appropriate refined price index to typical contractual terms indicated for 1978 purchases from unaffiliated suppliers.

To the maximum extent practicable, by-product, co-product and (when applicable) unaffiliated concentrate prices should be stated at market prices adjusted to f.o.b. smelter. Adjustments to these pricing bases should be made to reflect differences in grades and types of production. All adjustments should be consistent with expected sales, grades and types of concentrate processed. Applicants should attach as part of Exhibit B schedules describing and explaining the methods used to forecast these revenue and cost items and the adjustments required for these revenue and cost forecasts.

Applicants should explain fully any changes from the historical data that are required to forecast labor productivity, ore/concentrate grade and composition, materials and energy consumption per unit of output, yield rates and other physical input/output relationships.

Existing contractual terms should be used in forecasting those sale or input costs or prices to which the applicant is committed by contracts. The use of contract-dictated prices should be disclosed and supported by attaching as part of Exhibit B the terms and duration of labor and other supplier arrangements.

2.6 *Depreciation.* With the exceptions of Schedules B and C, depreciation refers to that used for Federal income tax purposes. Depreciation in Schedules B and C refers to that used in financial reporting statements.

Base Case Forecast Summary—Schedule A.1

General

All applicants must complete this schedule and its supporting schedules under the conditions of the "base" case in which no

additional pollution control facilities are considered.

Line 01—Net Income from Operations. Enter for each year from 1979 through 1985 the amounts reported in Schedule D.1., Line 23.

Lines 02 & 03—Depreciation and Amortization. Enter for each year from 1979 through 1985 the amounts reported in Schedule D.1, Lines 16 and 17.

Line 04—Operating Cash Flow. Enter for each year from 1979 through 1985 the total of amounts reported on Lines 01 through 03.

Line 05—Capital Expenditure Projection. Enter for each year from 1979 through 1985, the amounts reported in Schedule D.2, Line 07.

Line 06—Net Cash Flow Projections. Enter for each year from 1979 though 1985 the difference between amounts reported on Lines 04 and 05.

Line 07—Discount Factors. Amounts entered for each year from 1979 through 1985 have been provided by EPA.

Line 08—Present Value of Future Cash Flows. Enter for each year from 1979 through 1985 the product of Line 06 times Line 07.

Line 09—Terminal Value. Enter under the total column, the estimated terminal value of the smelter. This shall be computed by capitalizing the forecasted net income from operations (Schedule D.1, Line 23) for 1985 by the historical cost of capital as furnished by EPA. Specifically, divide net income from operations by the cost of capital (in decimal form).

Line 10—Discount Factor. Amount entered has been provided by EPA.

11—Present Value of Terminal Salvage Value. Enter the product of Line 09 times Line 10.

Line 12—Present Value of Future Cash Flows. Enter the sum of amounts previously reported on Line 08 for 1979 through 1985.

Line 13—Total Present Value. Enter the sum of Line 11 plus Line 12.

Line 14—Current Salvage Value. Enter the amount reported in Schedule C.2.a, Line 17.

Line 15—Net Present Value. Enter the difference between amounts reported as Lines 13 and 14.

Constant Controls Case forecast summary—Schedule A.2

General

All applicants must complete this schedule and its supporting schedules under the conditions where the applicant would undertake sufficient additional investment in pollution control facilities to achieve full compliance with Agency emission limitation standards.

Line 01—Net Income From Operations. Enter for each year from 1979 through 1985 the amount reported in Schedule E.1, Line 23.

Line 02—Constant Controls Capital Investment. Enter the estimated capital outlays for interim controls in the years which outlays would be made. These values shall correspond to the investment estimates shown in the supporting schedules for Line 16 of Schedule E.1.

Line 03—Sustaining Capital. Enter for each year from 1979 through 1985, the amounts reported in Schedule E.2., Line 07.

Line 04—Total. Enter the sum of Line 02 and Line 03 for each year.

Line 05—Adjusted Cash Flow Projections. Enter for each year from 1979 through 1985 the difference between amounts reported on Line 01 and 04.

Line 06—Discount Factors. Amounts entered for each year from 1979 through 1985 have been provided by EPA.

Line 07—Present Value of Future Cash Flows. Enter for each year from 1979 through 1985 the product of Line 05 times Line 06.

Line 08—Terminal Value. Enter under the total column, the estimated terminal value of the smelter. This shall be computed by capitalizing the forecasted net income from operations (Schedule E.1, Line 23) for 1985 by the historical cost of capital as furnished by EPA. Specifically, divide net income from operations by the cost of capital (in decimal form).

Line 09—Discount Factor. Amount entered has been provided by EPA.

Line 10—Present Value of Terminal Salvage Value. Enter the product of Line 08 times Line 09.

Line 11—Present Value of Future Cash Flows. Enter the sum of amounts previously reported on Line 07 for 1979 through 1985.

Line 12—Total Present Value. Enter the sum of Line 10 plus Line 11.

Line 13—Current Salvage Value. Enter the amount reported in Schedule C.2.a, Line 17.

Line 14—Net Present Value. Enter the difference between amounts reported as Lines 12 and 13. Applicants reporting a negative net present value will be eligible for a waiver from full compliance with constant control standards for SIP sulfur dioxide emission limitations. Applicants that do not have an existing system of constant control technology also must complete Schedule A.3 and Schedules F.1 and F.2 to determine their eligibility for a temporary or permanent waiver from interim-control requirements.

Interim Control Case Forecast Summary—Schedule A.3

General

Applicants that do not have an existing system of constant control technology must complete this schedule and its supporting schedules if they want to request a waiver from interim control requirements.

Line 01—Gross Operating Profit. Enter for each year from 1979 through 1985 the amount reported in Schedule F.1, Line 12. Applicants will be eligible for a temporary waiver from the interim development of constant control technology for sulfur dioxide emissions if the reported gross operating profit is a negative value for one or more years during the 1979 through 1985 forecast period. Applicants also should complete parts B and C to determine eligibility for a permanent waiver from interim-control requirements.

Line 02—Net Income from Operations. Enter for each year from 1979 through 1985 the amount reported in Schedule F.1, Line 23.

Line 03 & 04—Depreciation and Amortization. Enter for each year from 1979 through 1985 the amounts reported in Schedule F.1, Lines 16 and 17.

Line 05—Operating Cash Flow. Enter for each year from 1979 through 1985 the total of amounts reported on Lines 02 through 04.

Line 06—Interim Controls Capital Investment. Enter the estimated capital outlays for interim controls for the years during which outlays would be made. These values shall correspond to the investment estimates shown in the supporting schedules for Line 16 of Schedule F.1.

Line 07—Sustaining Capital. Enter for each year from 1979 through 1985, the amounts reported in Schedule F.2, Line 07.

Line 08—Total. Enter the sum of Line 06 and Line 07 for each year.

Line 09—Net Cash Flow Projections. Enter for each year from 1979 through 1985 the difference between the amounts reported on Line 05 and 08.

Line 10—Discount Factors. Amounts entered for each year from 1979 through 1985 have been provided by EPA.

Line 11—Present Value of Future Cash Flows. Enter for each year from 1979 through 1985 the product of Line 09 times Line 10.

Line 12—Terminal Value. Enter under the Total column, the estimated terminal value of the smelter. This shall be computed by capitalizing the forecasted net income from operations (Schedule F.1, Line 23) for 1985 by the historical cost of capital as furnished by EPA. Specifically, divide net income from operations by the cost of capital (in decimal form).

Line 13—Discount Factor. Amount entered has been provided by EPA.

Line 14—Present Value of Terminal Salvage Value. Enter the product of Line 12 times Line 13.

Line 15—Present Value of Future Cash Flows. Enter the sum of amounts previously reported on Line 11 for 1979 through 1985.

Line 16—Total Present Value. Enter the sum of Line 14 plus Line 15.

Line 17—Current Salvage Value. Enter the amount reported in Schedule C.2.a, Line 17.

Line 18—Net Present Value. Enter the difference between amounts reported on Lines 16 and 17. Applicants reporting a negative net present value will be eligible for a permanent waiver from interim use of a constant control system for sulfur dioxide emissions.

Consolidated Nonferrous Profit and Loss Summary—Schedule B.1

General

Prepare a separate consolidated profit and loss summary of total nonferrous metals operations for each fiscal year ending in 1974 through 1978 during which the firm engaged in smelter operations. Report in Column (a) for each respective period consolidated revenue and cost data associated with the firm's applicable mining, concentrator, smelter, refinery and/or other nonferrous operations. For firms engaged solely in nonferrous metal operations, amounts reported in Column (a) must agree with the firm's certified consolidated income statements except for reclassifications required to complete individual line items. Itemize the required reclassifications on a separate schedule and attach as part of Exhibit B. Firms with activities in addition to nonferrous metal operations also must attach as part of Exhibit B a schedule reconciling the firm's consolidated nonferrous operating results with its total consolidated income statement data.

Report respective amounts assignable to Mining, Concentrator, Smelter, Refinery and Other Nonferrous operating segments in Columns (d) through (h). Firms with more than one mine, concentrator, smelter,

refinery or "other" nonferrous operating entity should report in the specified operating segment column the combined operating results of all such segment entities. Applicants may not, however, combine the operations of more than one segment as identified in this schedule (e.g., the concentrator and smelter segments) without prior consultation with and approval from the Agency.

The amounts assigned to each segment's operations should include both (1) revenues and costs directly attributable to the segment's operating activities and (2) indirect operating costs shared with other segments *to the extent that a specific causal and beneficial relationship can be identified* for the inter-segment allocation of such costs. Do not allocate revenues and costs associated with central administrative activities for which specific causal and beneficial relationships to the activities of individual operating segments cannot be established. Nonallocable items include, but are not restricted to, amounts such as dividend and interest income on centrally administered portfolio investments, central corporate administrative office expenses and interest on long-term debt financing arrangements. Report amounts not directly assignable to Mining, Concentrator, Smelter, Refinery and Other Nonferrous operating segments as nontraceable in Column (c). Provide a detailed explanation of amounts classified as nontraceable on a separate schedule and attach as part of Exhibit B.

Consolidated eliminations reported in Column (b) should reflect only amounts arising from transactions among Mining, Concentrator, Smelter, Refinery and other Nonferrous segment operations reported in Columns (d) through (h) respectively. Explain all reported eliminations on a separate schedule and attach as part of Exhibit B.

Line 01—Operating Revenues. Report operating revenues assignable to each segment's product and service sales and transfers in accordance with pricing policies established for financial reporting purposes. Prepare and attach as part of Exhibit B a schedule classifying operating segment revenues for each fiscal year by (1) sales to unaffiliated customers and (2) inter-segment product transfers and sales to other affiliated customers with whom the applicable segment has a common bond of ownership and/or managerial control. Refer to the NSO financial reporting overview section on "Transfer Prices on Affiliated Party Transactions" for a definition of affiliated customer relationships. Explain in the schedule attached to Exhibit B the pricing policies used for reporting inter-segment product transfers and other sales to affiliated customers.

Line 03—Selling, General and Administrative (SG&A) Expenses. Report SG&A expenses attributable to each segment's annual operating activities. Exclude from SG&A expenses those operating costs to be reported separately on Lines 04 through 08. Attach as part of Exhibit B supporting schedules that (1) segregate SG&A expenses by major expense components, (2) classify the major expense components according to those costs incurred directly by each segment and costs allocated to the segment from indirect cost pools, and (3) explain the basis used in each case for indirect cost allocations.

Line 04—Taxes, Other Than Income Tax. Report all taxes (exclusive of Federal, state, local and foreign income taxes) assignable to each segment's annual operations. Attach as part of Exhibit B a schedule that (1) segregates these operating taxes by major expense component, (2) classifies each expense component according to direct and indirect cost elements and (3) explains the basis used in each case for indirect cost allocations.

Line 05—Exploration and Research Costs. Report exploration and research costs (exclusive of capitalized costs reported in Schedule B.2) that are assignable to each segment's annual operations. Attach as part of Exhibit B a schedule (1) segregating exploration and research costs by major expense components, (2) classifying each expense component according to direct and indirect cost elements and (3) explaining the basis used in each case for indirect cost allocations.

Line 06—Pollution Control Depreciation & Amortization. Report annual depreciation and amortization charges attributable to each segment's investment in pollution control facilities and equipment. Reported charges should be computed in accordance with depreciation and amortization methods adopted for financial reporting purposes in the firm's certified consolidated financial statements. Attach as part of Exhibit B a schedule segregating each segment's pollution control and non-pollution-control facility investments into major depreciable asset components. Describe for each asset component the (1) depreciation method adopted for financial reporting purposes, (2) annual depreciation and amortization charges by applicable fiscal year, (3) classification of annual charges into direct and indirect cost elements and (4) basis used for indirect cost allocations in each case.

Line 07—Other Facility Depreciation, Depletion & Amortization. Report annual depreciation, depletion and amortization charges (exclusive of charges reported on Line 06) assignable to each segment's operations. Refer to the Line 06 instructions for additional reporting requirements.

Line 08—Other Operating Expenses. Report any additional expenses assignable to each segment's annual operations. Attach as part of Exhibit B a schedule (1) segregating these additional expenses into major expense components, (2) classifying each expense component according to costs incurred directly by each segment and costs allocated to the segment from indirect cost pools and (3) explaining the basis used in each case for indirect cost allocations.

Line 09—Total Operating Expenses. Enter the total of amounts reported on Lines 02 through 08 for each segment.

Line 10—Income from Operations. Enter the amount of Line 01 minus the amount on Line 09 for each reporting segment.

Line 11—Income from Unconsolidated Affiliates. Report the total of annual (1) nonferrous segment equity in earnings of unconsolidated subsidiaries and affiliates subject to the "equity" method of accounting and (2) dividend income assignable to nonferrous metal operations from investments in unconsolidated subsidiaries and affiliates accounted for on the "cost" basis. Income from unconsolidated entities should either be assigned to the Other Nonferrous segment in Column (h) where appropriate or reported in Column (c) as nontraceable.

Line 12—Other Dividend & Interest Income. Report dividend income from the consolidated nonferrous segment's portfolio investments in marketable securities and interest income earned by the consolidated segment. Do not assign other dividend and interest income to the operating segments in Columns (d) through (h).

Line 13—Gain/(Loss) from Disposition of Property. Report net gains or losses recognized during each respective fiscal year from disposition of property, plant and equipment. Report such gains or losses in accordance with the firm's normal practice for certified financial statement reporting. If such gains or losses are not significant and are classified otherwise, no reclassification need be made. A note to this effect must be included in Exhibit B.

Line 14—Interest & Financial Charges on Short-Term Debt. Report interest expense and associated financial charges for each respective fiscal year on current liabilities in accordance with the assignment of such liabilities to individual nonferrous reporting segments in Schedule B.2. Do not include interest on the portion of long-term debt due within the current year for each reporting period.

Line 15—Interest & Financial Charges on Other Debt. Report interest expense and associated financial charges, including interest on capitalized leases, on all noncurrent debt directly assignable to the firm's consolidated nonferrous operations. Include interest on the current portion of long-term debt. Do not assign interest expense and financial charges on long-term debt to the operating segments in Columns (d) through (h).

Line 16—Miscellaneous Income & Expenses. Report minority interest in income, foreign currency exchange effects, and other non-operating income and expenses directly assignable to the firm's nonferrous operating segments and not recognized elsewhere on this schedule. Report such items in accordance with the accounting methods used for certified financial reporting purposes.

Line 17—Total Other Income and Expense. Enter the algebraic sum of amounts reported on Lines 11 through 16 for each segment.

Line 18—Net Taxable Income. Enter the amount of Line 10 minus the amount reported on Line 17 for each segment.

Consolidated Nonferrous Capital Investment Summary—Schedule B.2

General

Prepare a consolidated capital investment summary for total nonferrous metals operations during each fiscal year covered by Schedule B.1. Report in Column (a) for each year consolidated end-of-period asset investment and current liability balances associated with the firm's mining, concentrator, smelter, refinery and/or other nonferrous operations as defined in the instructions for Schedule B.1. For firms engaged solely in nonferrous metal operations, amounts reported in Column (a) must agree with the firm's certified consolidated balance sheets except for reclassifications required to complete individual line items. Itemize these reclassifications on a separate schedule and attach as part of Exhibit B. Firms with activities in addition to nonferrous metal operations also must attach as part of Exhibit B a schedule reconciling the firm's consolidated nonferrous asset investment and current liability balances with comparable data reported in its certified consolidated balance sheets.

Report amounts assignable to Mining, Concentrator, Smelter, Refinery and Other Nonferrous operating segments in Columns (d) through (h), respectively. The amounts assigned to each segment should include both (1) investments and liabilities directly identifiable with the segment's operating activities and (2) asset investments share with other segments to the extent that a specific causal and beneficial relationship can be established for the inter-segment allocation of such investments. Report amounts not assignable to particular segments as nontraceable in Column (c). Do not allocate to particular segments the costs of assets maintained for general corporate purposes. Provide a detailed explanation of amounts classified as nontraceable on a separate schedule and attach as part of Exhibit B.

Report consolidated eliminations in Column (b). Include only those eliminations applicable to transactions among Mining, Concentrator, Smelter, Refinery and Other Nonferrous segments as indicated in Columns (d) through (h).

Line 01—Cash on Hand and Deposit. Report in Column (a) total cash balances, as defined for certified financial statement reporting, either held by the consolidated nonferrous operating segments or, in the case of firms with activities in addition to nonferrous metal operations, assignable to the consolidated nonferrous operating segments on the basis of a causal and beneficial relationship with total corporate activities. Report in Columns (d) through (h) the respective amounts of such balances assignable to each operating segment on the basis of a causal and beneficial relationship with consolidated nonferrous segment operations. Attach as part of Exhibit B an explanation of the basis used for inter-segment allocations of cash on hand and deposit.

Line 02—Temporary Cash Investments. Report in Column (a) temporary cash investments in time deposits or other short-term securities. Include only those investments either held by the consolidated nonferrous operating segments to meet current-period tax payments and other budgeted expenditures specifically identifiable with their continued operations or, in the case of firms with activites in addition to nonferrous metal operations, assignable to the consolidated nonferrous segments for such purposes. Exclude any temporary cash investments for which no specific future outlay requirement can be identified.

Report in Columns (d) through (h) the respective amounts of temporary cash investments identifiable with each segment's future expenditure plans as indicated above. Attach as part of Exhibit B a schedule classifying temporary cash investments according to identifiable budgeted expenditure requirements.

Line 03 and 04—Net Trade Receivables. Report trade accounts and notes due from unaffiliated customers and from inter-segment transfers or sales to affiliated customers in Lines 03 and 04, respectively. Report the receivables, net of reserves for uncollectible accounts, they are recorded in the firm's financial records for certified financial statement reporting. Attach as part of Exhibit B an explanation of differences, if any, in typical trade credit terms granted by each segment to its affiliated and unaffiliated customers.

Lines 05 and 06—Inventory Investments. Report end-of-period inventories assignable to each segment according to the valuation method used for certified financial statement reporting. Report separately inventories held for resale, including raw materials inventories held for processing and subsequent sale (Line 05) and materials and supplies inventories (Line 06). If LIFO reserves are not specifically identifiable with respect to inventories held for resale, allocate them on a pro-rata basis.

Line 07—Other Current Assets. Report prepaid expenses, deferred charges, non-trade notes and accounts receivable, and other assets classified as current for certified financial statement reporting purposes that are assignable to each segment's operations. Attach as part of Exhibit B a schedule classifying these other current assets according to their types and amounts.

Line 08—Total Current Assets. Enter the total of Lines 01 through 07 for each segment.

Line 09—Gross Facility Investment. Report all capitalized costs classified as property, plant and equipment for certified financial statement reporting that are assignable to each operating segment. Refer to the Line 11 instructions for additional reporting requirements on nonferrous facility investment.

Line 10—Accumulated Depreciation, Depletion and Amortization. Report accumulated depreciation, depletion, amortization and associated valuation charges recorded for certified financial statement reporting purposes in relation to each segment's facility investments as reported on Line 09. Associated valuation charges are defined in Financial Accounting Standards Board (FASB) Statement No. 19 as losses recognized in connection with an impairment in the value of an unimproved property below its acquisition cost. Refer to the Line 11 instructions for additional reporting requirements on nonferrous facility investments.

Line 11—Net Facility Investment. Enter the amount reported on Line 09 minus the amount reported on Line 10 for each segment. Attach as part of Exhibit B a schedule classifying gross facility investments, accumulated depreciation, depletion and amortization charges, and net facility investments by major pollution-control and non-pollution-control components as defined in the supporting depreciation schedule for Schedule B.1, Lines 06 and 07. Identify for each asset component the direct versus joint-use investments assigned to each operating segment and explain the basis used to allocate amounts associated with joint-use facilities among the operating segments.

Line 12—Investments in Unconsolidated Subsidiaries. Report nonferrous segment investments in and advances to unconsolidated subsidiaries and affiliates as recorded on the firm's financial records. These unconsolidated entity investments should either be assigned to the Other Nonferrous segment in Column (h) where appropriate or reported in Column (c) as nontraceable.

Line 13—Other Investments and Advances. Report in columns (a) and (c) only noncurrent receivables, investments in debt and equity securities (exclusive of short-term security investments reported on Line 02) and other portfolio investments assignable to the consolidated nonferrous segment operations.

Line 14—Miscellaneous Non-Current Assets. Report all other assets classified as non-current for certified financial statement reporting and assignable to nonferrous segment operations. Attach as part of Exhibit B a schedule reporting by type and amount the major components of such investments.

Line 15—Total Other Non-Current Assets. Enter the total of Lines 12 through 14 for each respective segment.

Line 16—Total Asset Investment. Enter the total of Lines 08, 11 and 15 for each segment.

Lines 17 and 18—Trade Accounts and Notes Payable. Report trade notes and accounts due respectively on purchases from unaffiliated suppliers (Line 17) and on inter-segment transfers or purchases from affiliated suppliers (Line 18). Attach as part of Exhibit B an explanation of differences, if any, in typical trade credit terms received by each segment from its affiliated and unaffiliated suppliers.

Line 19—Other Expense Accruals. Report payments classified as current for salaries and wages, other employee benefits, operating taxes and related operating expenses previously reported for each segment on Schedule B.1, Lines 02 through 08. Attach as part of Exhibit B a schedule classifying by type and amount the major components of other expense accruals assignable to each segment.

Line 20—Current Notes Payable. Report payments due to nontrade creditors on short-term financing arrangements directly associated with each nonferrous segment's operations. Exclude current installments due on long-term debt financing arrangements, notes due to officers and directors, inter-segment loans or advances and loans or advances from affiliated operating segments within the firm.

Line 21—Other Current Liabilities. Report other nontrade payables, current income taxes payable and other liabilities classified as current for each segment's operations.

Line 22—Total Current Liabilities. Enter the total of Lines 17 through 21 for each segment.

Line 23—Net Capital Investment. Enter the amount reported on Line 16 minus the amount reported on Line 22 for each segment.

Smelter Profit and Loss Summary—Schedules C.1 General

Report annual revenues, costs and income taxes assignable to operation of the smelter subject to this NSO application. Assignable revenues and costs should include only the results of transactions either (a) directly associated with smelter operations or (2) for which the applicant can establish a causal and beneficial relationship with smelter operations. The annual data requested in this schedule should be reported for each of the five fiscal years immediately preceeding the year in which this application is filed or for that portion of the five-year period during which the firm engaged in smelter operations.

Line 01—Primary Metal Sales. Enter for each fiscal year the amount reported in Schedule C.1.a. Line 40.

Line 02—Co-Product & By-Product Sales. Report annual revenues, net of returns and allowances, derived from smelter sales and/or transfers of co-products and by-products to both unaffiliated and affiliated customers. Attach as part of Exhibit B a supporting schedule for each major co-product and by-product component of smelter revenues. Segregate the revenues reported by major co-product and by-product components into

their unaffiliated customer and affiliated customer elements. Report for each component's unaffiliated and affiliated customer revenue elements the (1) average grade of product sold, (2) actual quantity sold, (3) average price per unit and (4) total smelter revenues. Also show for each product line any adjustments required to restate transfer prices and explain the basis for such adjustments. Refer to the NSO Financial Reporting Overview section on "Transfer Prices on Affiliated Party Transactions" for instructions on the restatement of affiliated customer revenues.

Line 03—Tolling Service Revenues. Enter for each fiscal year the amount reported in Schedule C.1.a. Line 53.

Line 04—Other Operating Revenues. Report annual revenues directly associated with smelter operations that have not previously been reported on Lines 01 through 03. Attach as part of Exhibit B a schedule showing the types and amounts of sales reported as other operating revenue. The following non-operating revenue and income items should *not* be included as other operating revenue or as a part of revenues reported on Lines 01 through 03.

- Royalties, licensing fees and other income from intangibles
- Interest and dividend income on portfolio investments
- Equity in income (loss) of unconsolidated subsidiaries and affiliates
- Gain (loss) from discontinued operations and disposal of property
- Minority interest adjustment to consolidated subsidiary income
- Extraordinary items

Line 05—Total Operating Revenue. Enter the total of amounts reported on Lines 01 through 04 for each year.

Line 06—Concentrates Processed. Report the cost of concentrates processed and sold or transferred to unaffiliated and affiliated customers. Concentrates purchased from unaffiliated suppliers should be valued at the actual prices paid. Concentrates purchased from affiliated suppliers should be valued at or, if necessary, restated to equivalent prices quoted by unaffiliated suppliers. If prices used to report revenues are c.i.f. and to report concentrate costs are f.o.b. smelter, all transportation charges paid on the seller's or buyer's account should be excluded from smelter expenses. Attach as part of Exhibit B supporting schedules showing the:

- Annual value of concentrate purchases classified according to purchases from unaffiliated and affiliated suppliers.
- Cost of sales adjustments to concentrate purchases for net annual additions to or withdrawals from concentrate inventories, freight-in on concentrate purchases and inventory spoilage.
- Impact on cost of sales for restating, where applicable, the cost of concentrate purchases from affiliated suppliers to the equivalent prices paid to unaffiliated suppliers.
- Volumes, grades and net prices of concentrate purchases from unaffiliated and affiliated suppliers by type of concentrate purchased.
- Volumes, grades and net prices associated with toll concentrates processed by type of concentrate.

Line 07—Other Materials Costs. Report annual costs incurred for flux, refractories, coke and other materials used by the smelter in its processing of concentrates. Materials purchased from unaffiliated suppliers should be valued at the actual prices paid after adjustment for transportation costs incurred. Materials purchased from affiliated suppliers should be valued at or, if necessary, restated to equivalent prices quoted by unaffiliated suppliers. Include in Exhibit B supporting schedules showing the:

- Annual value of material purchases classified according to purchases from unaffiliated and affiliated suppliers.
- Cost of sales adjustments to material purchases for net annual additions to or withdrawals from material inventories, freight costs on material purchases and inventory loss.
- Impact on cost of sales for restating, where applicable, the costs of material purchases from affiliated suppliers to equivalent prices paid to unaffiliated suppliers.
- Classification of other material costs by major cost factors for each cost component that exceeds 20 per cent of any line item in the cost of sales schedule.

Line 08—Production Labor Costs. Report in each column total direct labor costs incurred by the smelter for processing purchased and toll concentrates.

Include in Exhibit B supporting schedules showing the:

- Manhours and wage rates for major labor classifications.
- Potential impact on wage rates of provisions in the smelter's current labor contracts.
- Explanation of major variances observed in direct labor costs over the five-year period as a result of factors such as strikes or new labor contracts.

Line 09—Pollution Control Costs. Report in each column expenses incurred for operating and maintaining pollution control facilities. All by-product credits associated with pollution control facility operations should be eliminated and reported on Line 02. Depreciation and amortization charges against the smelter's pollution control facilities should be reported separately on Line 16. Attach as part of Exhibit B supporting schedules showing the:

- Major pollution control cost elements with their values classified according to direct and indirect cost factors.
- Techniques used to allocate indirect pollution control costs to major cost pools.

Line 10—Other Production Costs. Report annual smelter overhead and other production costs not previously reported on Lines 06 through 10. By-product credits, if any, should be eliminated and reported on Line 02 as operating revenues. Attach as part of Exhibit B supporting schedules showing the:

- Major cost elements classified according to direct and indirect production costs.
- Disaggregation of major overhead cost components into their fixed and variable cost elements.
- Allocation techniques used in assigning indirect overhead costs to the major cost components.
- Elements of overhead costs represented by purchases from affiliated suppliers and adjustments, if any, required to restate these costs on the basis of equivalent prices paid to unaffiliated suppliers.

Line 11—Total Cost of Sales. Enter the total of amounts reported on Lines 06 through 10 for each year.

Line 12—Gross Operating Profit. Enter the amount reported on Line 05 minus the amount reported on Line 11 for each year.

Line 13—Selling, General and Administrative (SG&A) Expenses. Report SG&A expenses attributable to the smelter's annual operating activities. Exclude those operating costs to be reported separately on Lines 14 through 18. Attach as part of Exhibit B supporting schedules (1) segregating SG&A expenses by major expense components, (2) classifying the major expense components according to those costs incurred directly by smelter operations and costs allocated to the smelter from indirect cost pools and (3) explaining the basis used for indirect cost allocations.

Line 14—Taxes, Other Than Income Tax. Report operating taxes assignable to the smelter in accordance with instructions for Schedule B.1, Line 04.

Line 15—Exploration and Research Costs. Report exploration and research costs assignable to the smelter in accordance with instructions for Schedule B.1, Line 05.

Line 16—Pollution Control Depreciation and Amortization. Report annual depreciation and amortization charges attributable to the smelter in accordance with instructions for Schedule B.1, Line 16.

Line 17—Other Facility Depreciation and Amortization. Report annual depreciation and amortization charges attributable to the smelter in accordance with instructions for Schedule B.1, Line 07.

Line 18—Miscellaneous Operating Expenses. Report additional expenses assignable to the smelter in accordance with the instructions for Schedule B.1, Line 08.

Line 19—Total Other Operating Expenses. Enter the total of amounts reported on Lines 13 through 18 for each year.

Line 20—Income From Operations. Enter the amount reported on Line 12 minus the amount reported on Line 19 for each year.

Lines 21-23—Other Income and Expenses. Report amounts assignable to smelter operations in accordance with instructions for Schedule B.1, Lines 13, 14, and 16.

Line 24—Total Other Income and Expense. Enter the algebraic sum of amounts reported on Lines 21 through 23 for each year.

Line 25—Net Taxable Income. Enter the amount reported on Line 20 minus the amount reported on Line 24 for each year.

Supplemental Smelter Revenue Data—Schedule C.1.a.

General

Report annual product sales and associated operating revenues, net of returns and allowances, from smelter sales and/or transfers of copper, lead and zinc products and totalling services to both unaffiliated and affiliated customers. Revenues from affiliated customer sales should be stated or, if necessary, restated at prices equivalent to those received on comparable sales to unaffiliated customers. Refer to the NSO Financial Reporting Overview discussion of "Transfer Prices on Affiliated Party Transactions" for instructions on the restatement of affiliated customers revenues.

Lines 01, 14 and 27—Primary Nonferrous Product Sales. Report in thousands of tons the total quantity of copper, lead and zinc products sold in each fiscal year.

Lines 02, 15 and 28—Unaffiliated Customer Sales. Report in thousands of tons the quantities of copper, lead and zinc product sales to unaffiliated customers during each fiscal year.

Lines 03, 16 and 29—Unaffiliated Customer Revenues. Report in thousands of dollars

the total operating revenues derived from smelter sales of copper, lead and zinc to unaffiliated customers during each fiscal year.

Lines 04, 17 and 30—Unaffiliated Customer Prices. Report the average unit price, computed as operating revenues reported on Lines 03, 16 and 29 divided by the quantities reported on Lines 02, 15 and 28, respectively, received on smelter sales of copper, lead and zinc to unaffiliated customers during each fiscal year.

Lines 05, 18 and 31—Average Product Quality Grade. Report the average quality rating assigned to copper, lead and zinc products purchased by the smelter's unaffiliated customers.

Lines 06, 19 and 32—Affiliated Customer Sales. Report in thousands of tons the quantities of copper, lead and zinc product sales to affiliated customers during each fiscal year.

Lines 07, 20 and 33—Affiliated Customer Revenues. Report in thousands of dollars the total operating revenues derived from smelter sales of copper, lead and zinc to affiliated customers during each fiscal year.

Lines 08, 21 and 34—Affiliated Customer Prices. Report the average unit price, computed as operating revenues reported on Lines 07, 20 and 33 divided by the quantities reported on Lines 06, 19 and 32, respectively, received on smelter sales of copper, lead and zinc to affiliated customers during each fiscal year.

Lines 09, 22 and 35—Average Product Quality Grade. Report the average quality rating assigned to copper, lead and zinc products purchased by smelter's affiliated customers.

Lines 10, 23, and 36—Total Primary Product Revenues. Report total operating revenues derived from the smelter's sales to unaffiliated and affiliated customers of respective copper (Lines 03 + 07), lead (Lines 16 + 20) and zinc (Lines 29 + 33) during each fiscal year.

Lines 11, 24 and 37—Transfer Price Adjustments. Report operating revenue adjustments required to equate affiliated customer transfer prices with unaffiliated customer market prices on smelter sales of copper, lead and zinc during each fiscal year. Attach as part of Exhibit 3 an explanation of the method used for restating transfer prices where such adjustments are necessary.

Lines 12, 25 and 38—Other Revenue Adjustments. Report sales returns and allowances and other adjustments applicable to the segment's revenues derived from copper, lead and zinc product sales. Attach as part of Exhibit B a schedule reporting the types and amounts of such adjustments.

Lines 13, 26 and 39—Adjusted Product Revenues. Enter the algebraic sums of Lines 10 through 12 for adjusted copper sales (Lines 13), Lines 23 through 25 for adjusted lead sales (Line 26) and Lines 36 through 38 for adjusted zinc sales (Line 39).

Line 40—Primary Metal Revenues. Enter for each fiscal year the sum of Lines 13, 26 and 39.

Line 41—Toll Concentrates Processed. Report in thousands of tons the total quantity of toll concentrates processed during each fiscal year.

Lines 42 to 45—Unaffiliated Customer Toll Revenues. Report for each fiscal year the quantity of toll concentrates processed for unaffiliated customers (Line 42), total operating revenues derived from this processing (Line 43), average price charged per ton of concentrate processed (Line 44 = Line 43/42) and the average quality rating assigned to toll concentrates processed for unaffiliated customers (Line 45).

Lines 46 to 49—Affiliated Customer Toll Revenues. Report for each fiscal year the quantity of toll concentrates processed for affiliated customers (Line 46), total operating revenues derived from such processing (Line 47), average price charged per ton of concentrate processed (Line 48 = Line 47/46) and the average quality rating (Line 49) assigned to toll concentrates processed for affiliated customers.

Line 50—Tolling Service Revenues. Enter for each fiscal year the total of amounts reported on Lines 43 and 47.

Line 51—Transfer Price Adjustments. Report operating revenue adjustments required to equate affiliated customer transfer prices with market prices charged to unaffiliated customers on the smelter's tolling services. Attach as part of Exhibit B an explanation of the method used for restating transfer prices where such adjustments are necessary.

Line 52—Other Revenue Adjustments. Report other adjustments applicable to the smelter's tolling service revenues. Attach as part of Exhibit B a schedule reporting the types and amounts of such adjustments.

Line 53—Adjusted Tolling Service Revenues. Enter for each fiscal year the total of amounts reported on Lines 50 through 52.

Smelter Capital Investment Summary—Schedule C.1

General

Report annual end-of-period asset investments and current liabilities associated during the fiscal years indicated in Schedule C.1 with operation of the smelter subject to this NSO application. Reporting procedures applicable to the smelter's capital investment summary will in general coincide with procedures stipulated by the instructions for Schedule B.2. Certain modifications may be required, however, to meet Agency reporting requirements outlined in the following instructions.

Firms with multi-facility smelter operations must segregate data for the specific smelter subject to this application from consolidated smelter operating data reported in Schedule B.2. Applicants also may be required to restate trade receivables and payables for transfer price adjustments on the smelter's transactions with affiliated customers. In addition to these potential modifications in financial reporting procedures, applicants must provide more extensive data for smelter investments in production and pollution control facilities.

Lines 01 & 02—Cash & Temporary Cash Investments. Report total cash balances (Line 01) and temporary cash investments (Line 02) assignable to the smelter's operations at the end of each fiscal year in accordance with instructions provided for Schedule B.2. Attach as part of Exhibit B a schedule classifying the smelter's temporary cash investments associated with identifiable budgeted expenditure requirements if these investments differ from the amounts reported previously for Schedule B.2, Line 01.

Lines 03 & 04—Net Trade Receivables. Report trade accounts and notes, net of reserves for uncollectible items, assignable to the smelter in relation to its unaffiliated (Line 03) and affiliated (Line 04) customer sales and transfers. Trade receivables reported by the smelter as due from affiliated customers should be stated or, if necessary, restated on credit terms equivalent to those received by unaffiliated customers on a sale of comparable products. Attach as part of Exhibit B a schedule showing adjustments in the smelter's receivables investments required to equate trade credit terms extended to affiliated and unaffiliated customers.

Lines 05 & 06—Inventory Investments. Report respective end-of-period investments in raw material, work-in-process and finished good inventories held to support the smelter's future production and sale of products (Line 05) and associated inventories of other materials and supplies (Line 06). Inventory purchased from affiliated suppliers should be stated or, if necessary, restated at market prices prevailing on purchases from unaffiliated suppliers. Attach as part of Exhibit B a schedule (1) describing whether inventories have been valued on a last-in-first-out (LIFO), first-in-first-out (FIFO) or other cost allocation process, (2) describing the smelter's transfer pricing policies on inventory purchases from affiliated suppliers and (3) presenting adjustments required in reported inventory investments to reflect restatements of transfer prices on purchases from affiliated suppliers.

Line 07—Other Current Assets. Report other current assets assignable to the smelter's operations for each respective year in accordance with instructions provided for Schedule B.2. Attach as part of Exhibit B a schedule classifying the smelter's other current assets if these investments differ from the amounts reported previously in Schedule B.2.

Line 08—Total Current Assets. Enter the total of amounts reported on Lines 01 through 07 for each fiscal year.

Lines 09 & 14—Property, Plant & Equipment. Report by individual line item property, plant and equipment investments assignable to smelter operations for each fiscal year. Include in gross facility investments at the end of each period both (1) property, plant and equipment directly associated with the smelter's operations and (2) facilities shared with other operating segments to the extent that a causal and beneficial relationship can be established for the intersegment allocation of such facility investments.

Attach as part of Exhibit B a schedule reporting by individual line item the annual capital expenditures on additional property, plant and equipment investments in the smelter's operations. Further classify these annual capital expenditures into both (1) investments required to maintain the smelter versus investments in smelter expansion and improvement and (2) direct facility versus joint-use facility investments. Explain the method used for allocating capital expenditures on joint-use facilities to the smelter's operations. Refer to the Line 17 instructions for additional reporting requirements on the smelter's facility investments.

Line 15—Total Smelter Investment. Enter the total of amounts reported on Lines 09 through 14 for each respective fiscal year.

Line 16—Accumulated Depreciation & Amortization. Report, in accordance with the Line 10 instructions in Schedule B.2, accumulated depreciation, amortization and other valuation charges assignable to the smelter's investment in property, plant and equipment. Refer to the Line 17 instructions

for additional reporting requirements on smelter facility investments.

Line 17—Net Smelter Investment. Enter the amount reported on Line 15 minus the amount reported on Line 16 for each fiscal year. Attach as part of Exhibit B a schedule depicting additional reporting requirements stipulated by the Line 11 instructions in Schedule B.2 if the supplemental capital investment data differ from amounts reported previously in Schedule B.2, Line 11.

Line 18—Other Non-Current Assets. Report, in accordance with the Line 14 instructions in Schedule B.2, other assets assignable to the smelter's operations for each fiscal year. Attach as part of Exhibit B a schedule reporting by type and amount the major components of such investments if the data differ from information reported previously under Schedule B.2, Line 14.

Line 19—Total Smelter Capital Investment. Enter the total of amounts reported on Lines 08, 17 and 18 for each fiscal year.

Lines 20 & 21—Trade Accounts & Notes Payable. Report trade accounts and notes due on the smelter's purchases from unaffiliated suppliers (Line 20) and on its inter-segment transfers or purchases from affiliated suppliers (Line 21). Trade payables reported by the smelter as due to affiliated suppliers should be stated or, if necessary, restated on terms equivalent to those received from unaffiliated suppliers on a purchase of comparable materials. Attach as part of Exhibit B a schedule showing adjustments required on the smelter's trade payables to equate trade credit terms received from affiliated and unaffiliated suppliers.

Line 22—Other Expense Accruals. Report, in accordance with the Line 19 instructions in Schedule B.2, other expense accruals assignable to the smelter's operations during each fiscal year. Attach as part of Exhibit B a schedule classifying by type and amount the major components of such accruals if the information differs from data reported previously under Line 19 in Schedule B.2.

Line 23—Current Notes Payable. Report, in accordance with the Line 20 instructions in Schedule B.2, payments due to nontrade creditors on debt financing arrangements associated with the smelter's operations.

Line 24—Other Current Liabilities. Report other nontrade payables classified as current obligations assignable to the smelter's operations.

Line 25—Total Current Liabilities. Enter the total of amounts reported on Lines 20 through 24 for each fiscal year.

Line 26—Net Smelter Capital Investment. Enter the amount reported on Line 19 minus the amount reported on Line 25 for each fiscal year.

Cash Proceeds from Liquidation—Schedule C.2.a

General

Applicants should determine the current salvage value of their existing investment in the smelter as the net proceeds that could be derived through an orderly liquidation of the smelter's assets. The net cash proceeds should be reported after an appropriate allowance for disposal costs, contractual claims against the smelter (e.g., labor termination penalties), and income tax effects on the corporation of such liquidation costs.

The applicant must stipulate the most advantageous alternative market (use) for the smelter's facilities. Generally, this market will be:

- Secondary market for used plant and equipment
- Sale for scrap
- Abandonment where the disposal cost exceeds scrap value.

The current net salvage value should be disaggregated into the same property plant and equipment asset groups reported under the historical capital investment summary, Schedule C.2.

Line 01—Current Assets. Enter in Columns 1 and 2, the value of total current assets shown in Line 08 of Schedule C.2 (Historical Capital Investment Summary) for 1978. No gain or loss should be reported in Columns 3 through 5 for the liquidation of current asset investments.

Lines 02-07—Property Plant and Equipment. Enter in Column 1 the appraised liquidation value (in terms of pretax cash proceeds) of the smelter by asset group. This estimate should be certified by a qualified third party professional appraiser and shall represent the best use and highest alternative value of these assets. The liquidation value of any assets which are jointly used by the smelter and other operating segments shall be excluded if upon closure of the smelter, such assets would continue in service for the non-smelter activity.

In Column 2, report the net book value of these assets for which liquidation values have been reported in Column 1. The reported values should correspond with amounts reported for 1978 in Lines 09 through 15 in Schedule C.2 as adjusted for appropriate eliminations of joint-use facilities and reconciliation to a net book value as reported for income taxes. Attach as part of Exhibit B supporting schedules showing all adjustments and conversion of net book value as reported on the financial statements to net book value, that would be used for income tax purposes.

Compute Column 3 as Column 1 less Column 2. The gain (or loss) shown in Column 3 shall be segregated into ordinary income and capital gains components subject to taxation pursuant to applicable income tax rules. Enter ordinary income in Column 4 and capital gains in Column 5.

Line 08—Total. Enter the sum of Lines 02 through 07 for each of the columns.

Line 09—Other Non-current Assets. In Column 1, report the appraised value of other non-current assets in accordance with the instructions for Line 14, Schedule B.2, *except* that any joint asset(s) that would continue in the event of smelter liquidation shall be excluded. This estimate shall be certified by a qualified third party professional appraiser.

In Column 2, report the net book value of the non-current assets directly corresponding to those assets included in the liquidation value estimated under Column 1.

The remaining columns shall be completed in accordance with the instructions given above Lines 02 to 06.

Line 10—Total Smelter Value. Enter the sum of Lines 01, 08 and 09.

Line 11—Total Current Liabilities. Report in both Columns 1 and 2 the value of total current liabilities shown in Line 25 of Schedule C.2 (Historical Capital Investment Summary) for 1978.

Line 12—Gross Liquidation Value. Line 10 less Line 11.

Line 13—Liquidation Costs. In Columns 1, 3, and 4, report the value of any liquidation costs such as labor contract termination penalties, severance pay and related costs, associated with closure of the smelter.

Line 14—Taxable Gain (or Loss). Enter in Columns 4 and 5, enter the differences between Line 12 less Line 13.

Line 15—Income Tax Rate. Enter the marginal income tax rate for 1978 of the firm for ordinary income and capital gains in Column 4 and 5 respectively.

Line 16—Income Tax on Gain (or Loss). In Columns 4 or 5, enter the product of Line 14 multiplied by the marginal income tax rates reported in Line 15. In Column 1 enter the sum of Column 4 plus Column 5.

Line 17—After Tax Cash Proceeds. Line 12 less Lines 13 and 16. This computation applies to Column 1 only.

"Base" Case Pro-Forum Profit and Loss Summary—Schedule D.1

General

Report annual forecasts of operating revenues, operating costs and income taxes anticipated during calendar years 1979 through 1985 from operation of the smelter subject to this NSO application. These *"base" case estimates should be forecast under the assumption that additional sulfur dioxide control facilities beyond those already in operation will not be required* to comply with SIP emission limitations. Report all line items under each column for the years indicated by this schedule.

Line 01—Primary Metal Sales Revenue. Enter the totals reported in Schedule D.1.a, Line 16.

Line 02—Co-Product & By-Product Sales Revenue. Enter the totals reported in Schedule D.1.a, Line 20.

Line 03—Totaling Service Revenues. Enter the totals reported in Schedule D.1.a, Line 25.

Line 04—Other Operating Revenues. Report operating revenues anticipated from sources not accounted for under Lines 01 through 03. Refer to instructions for Line 04 in Schedule C.1 items that should not be included in "other" operating revenues. Attach as part of Exhibit B a schedule showing annual amounts forecasted by individual revenue component for "other" operating revenues associated with the smelter's pro-forma, "base" case operations.

Identify in the supporting schedule any differences in the "other" revenue components reported in Schedules C.1. and D.1 and explain the reasons for such differences.

Line 05—Total Operating Revenues. Report the total of amounts reported on Lines 01 through 04.

Line 06—Concentrate Costs. Enter the totals reported in Schedule D.1.a, Line 30.

Line 07—Other Material Costs. Report total pro-forma costs forecasted for flux, refractories, coke and other materials directly associated with the smelter's processing of concentrates. Attach as part of Exhibit B a schedule showing the annual amounts forecasted by major material cost components. For each cost component, identify the forecasted quantity and unit price elements of material cost and explain the basis for forecasting these quantity and price elements. Identify in the supporting schedule any differences in the "other" material cost components shown in Schedules C.1. and D.1. and explain the reasons for such differences.

Line 08—Production Labor Costs. Enter the totals reported for calendar years 1979 through 1985 in Schedule D.1.a, Line 35.

Line 09—Production Overhead Costs. Report the total pro-forma costs forecasted for indirect labor, indirect materials and other production overhead costs associated with the smelter's "base" case forecasts. Attach as part of Exhibit B a schedule showing annual overhead costs projected by major cost components associated with the smelter's operations. For each cost component, where appropriate, identify the forecasted quantity and unit price elements of overhead costs and explain the basis for estimating these quantity and price elements. Also identify in the supporting schedule any differences in production overhead cost classifications used in Schedules C.1 and D.1 and explain the reasons for such differences.

Line 10—Pollution Control Costs. Report the total, pro-forma costs forecasted for expenses identifiable with operation and maintenance of the smelter's existing pollution control equipment and facilities. By-product credits associated with operation of the pollution control facilities should be eliminated from the cost accounts and reclassified to Schedule D.1.a, Line 18. Attach a schedule as part of Exhibit B classifying pollution control costs by major cost components. Explain the basis used for estimating each of the cost components. Identify in the supporting schedule any differences in the pollution control cost classifications shown in Schedules C.1 and D.1 and explain the reasons for such differences.

Line 11—Total Cost of Sales. Report the sum of operating costs reported on Lines 06 through 10.

Line 12—Gross Operating Profit. Report the difference between Line 05 minus Line 11.

Line 13—Selling, General & Administrative Expenses. Report the total, pro-forma costs forecasted for administrative, marketing and general corporate overhead functions that directly or indirectly support the smelter's operations. Refer to the NSO Financial Reporting Overview for a general discussion of indirect cost allocations from overhead cost pools. Attach as part of Exhibit B a schedule classifying selling, general and administrative expenses into major cost components. Indicate whether each component represents costs directly assignable to the smelter or indirect costs allocated from other business segments to the smelter. Explain the basis used for estimating the amount of expected costs included in each component and the basis used for allocating indirect cost elements to the smelter. Identify and explain any differences in the selling, general and administrative cost classification used in Schedules C.1 and D.1.

Line 14—Taxes, Other Than Income Taxes. Report the total, pro-forma costs forecasted for property taxes and associated levies paid to governmental units by or for the benefit of the firm's smelter operations. Attach as part of Exhibit B a schedule classifying operating taxes by major cost components. Indicate whether each cost component represents costs directly assignable to the smelter or indirect costs allocated from overhead cost pools. Explain the basis for allocating indirect taxes to the smelter. Identify and explain any differences in the component classifications used in Schedules C.1. and D.1.

Line 15—Exploration and Research Costs. Report the total, pro-forma estimates of costs incurred directly by or for the benefit of the smelter operations. Attach as a part of Exhibit B a schedule classifying the costs by major direct and indirect cost components. Identify and explain any differences in pro-forma versus historical cost classifications used in Schedules C.1 and D.1.

Line 16—Pollution Control Facility Depreciation and Amortization. Report the pro-forma estimates of depreciation and amortization charges associated with the smelter's investment in pollution control equipment and facilities. Attach as part of Exhibit B supporting schedules classifying pollution control facilities by major assets or asset groups. For each facility component, indicate the depreciation or amortization that would be reported for tax purposes. Based on income tax depreciation, report the original cost of the component assets, undepreciated balance of the component assets, the remaining depreciable life and the annual depreciaton or amortization charge. Indicate for each asset component whether the depreciation and amortization charges represent direct cost assignments or indirect cost allocations to the smelter.

Line 17—Other Smelter Facility Depreciation and Amortization. Report the pro-forma estimates of depreciation and amortization charges associated with the smelter's investment in equipment and facilities other than those classifed as pollution control facilities. Attach as part of Exhibit B supporting schedules prepared according to the instructions for Line 16 above.

Line 18—Interest on Short-Term Debt. Report the pro-forma estimates of interest and othe. financing charges on short-term obligations classified in the smelter's current liabilities on Schedule C.1. Interest and associated financing charges on long-term debt should *not* be included as an expense identifiable with the smelter's operations. Attach as part of Exhibit B a schedule showing the interest-bearing, short-term debt contracts identifiable with the smelter's operations, the interest rate projected for these contracts and the estimated annual interest charges. Identify and explain any differences in the pro-forma versus historical classifcation in Schedules C.1. and D.1. of short-term debt contracts identifiable with the smelter operations.

Line 19—Miscellaneous Operating Expenses. Report only the total of pro-forma operating expenses associated with or allocated to the smelter that cannot be appropriately classified in one of the preceeding line items. Attach as part of Exhibit B a schedule showing the classification of these residual operating expenses into major cost components. Explain the basis used for forecasting the costs under each component. Identify each cost component in terms of direct or indirect cost and explain the basis used for allocating the indirect costs to smelter operations. Identify and explain the differences in the pro-forma versus historical cost classifications included in Schedules C.1. and D.1.

Line 20—Total Other Operating Expenses. Enter the sum of operating costs reported on Lines 13 through 19.

Line 21—Income From Operations. Report the balance obtained by subtracting Line 20 from Line 12.

Line 22—Income Taxes. Multiply income from operations by the sum of the Federal, State and local marginal tax rates. Attach as part of Exhibit B a schedule detailing the estimated marginal tax rate by taxing entity.

Line 23—Net Income From Operations. Report the balance obtained by subtracting Line 22 from Line 21.

Supplemental Revenue and Cost Forecast Information—Schedule D.1.a

General

Report forecasts of annual indicated operating revenue and cost factors anticipated during calendar years 1979 through 1985 from operation of the smelter subject to this NSO application. These *"base" case estimates should be forecast under the assumption that additional sulfur dioxide control facilities beyond those already in operation will not be required* to comply with SIP emission limitations. Report all line items under each column for the years indicated by this schedule.

Lines 01, 06 and 11—Forecasted Unit Sales. Report estimates for the annual quantity of copper, lead and zinc to be produced and sold by the smelter. Attach as part of Exhibit B an explanation of the methods used to make these forecasts. Indicate how the forecasted sales for each product line relate to external forecasts for industry production of copper, lead and zinc and for average annual capacity utilization experience by the industry's nonferrous metals producers. Explain the differences, if any, between historical trends observed in the smelter's copper, lead and zinc sales experience (Schedule C.1.a) and the trends projected by this forecast.

Lines 02, 07 and 12—Forecasted Price Per Unit. Report the estimated per unit market prices to be received on the smelter's projected sales of copper, lead and zinc. Attach as part of Exhibit B an explanation of the method used to make these price forecasts. Explain how forecasted prices relate to external projections of refined prices for copper, lead and zinc. Explain the differences, if any, between historical trends observed in copper, lead and zinc prices reported by the smelter (Schedule C.1.a) and price trends projected by this forecast.

Lines 03, 08 and 13—Forecasted Primary Metal Revenues. Enter the products of quantity and price forecasts for copper (Line 01 × 02), lead (Lines 06 × 07) and zinc (Lines 11 × 12.).

Lines 04, 09 and 14—Revenue Adjustments. Report the estimates of required adjustments, if any, to total copper, lead and zinc revenues for sales returns, allowances and other adjustments factors. Attach as part of Exhibit B a schedule indicating the types and amounts of these estimated revenue adjustments.

Lines 05, 10 and 15—Net Primary Metal Revenues. Enter the net revenue projections after deducting estimated revenue adjustments for the sale of copper (Line 03—04), lead (Line 08—09) and zinc (Line 13—14).

Line 16—Pro-Forma Primary Metal Revenues. Enter for each year the sum of Lines 05, 10 and 15.

Line 17—Forecasted Co-Products Revenues. Report the projected net revenues anticipated for each year from sales of co-products derived from the smelter's operations. Attach as part of Exhibit B a schedule showing by individual type of co-product, the estimated quantity to produced and sold, market price per unit of sales and total revenues derived from the co-product sales. Explain the differences, if any, between historical trends observed in the smelter's co-

product sales (Schedule C.1) and revenue trends projected by this forecast.

Line 18—Pollution Control by-Product Revenues. Report projected revenues anticipated from the sale of by-products derived from operation of the smelter's pollution control facilities. Attach as part of Exhibit B a schedule showing by type of by-product produced, the estimated quantity of output, price to be received per unit of output sold and total revenue derived from the by-product sales. Explain the differences, if any, between historical trends observed in the smelter's by-product sales (Schedule C.1) and revenue trends projected by this forecast.

Line 19—Other By-Product Revenues. Report projected revenues anticipated from the sales of gold, silver and other by-products derived from the smelter's operations. Attach as part of Exhibit B a schedule providing additional forecast documentation as specified in the instructions for Line 18.

Line 20—Total Co-Product and By-Product Revenues. Enter for each year the total of Lines 17 through 19.

Line 21—Forecasted Toll Concentrate Processing. Report the projected quantity of toll concentrates to be processed during each year. Attach as part of Exhibit B a description of the projected types and grades of concentrates to be processed and an explanation of the method used in developing these projections.

Line 22—Tolling Service Price Forecast. Report for each year the per-unit price anticipated from the smelter's tolling service processing. Attach as part of Exhibit B an explanation of the method used to develop these market price projections in relation to the types and grades of concentrates expected to be available for processing.

Line 23—Tolling Service Revenue forecast. Enter for each year the product of average quantity and price projections for the smelter's tolling services.

Line 24—Tolling Service Revenue Adjustments. Report the amounts of any adjustments against the smelter's total tolling service revenues. Attach as part of Exhibit B an explanation of the types of adjustments anticipated and the method used in forecasting such adjustments.

Line 25—Net Tolling Service Revenues. Enter for each year the net revenue projection after deducting estimated revenue adjustments on tolling service activities (Line 23 less line 24). Attach as part of Exibit B an explanation of the differences, if any, between historical trends observed in the smelter's tolling service revenues (Schedule C.1) and the revenue trend projected by this forecast.

Line 26—Forcasted Quantity of Concentrate Processed. Report for each year an estimate for the total quantity of concentrates to be processed by the smelter. Attach as part of Exhibit B a description of the types and grades of concentrates available for processing. Explain the method or methods used in developing these concentrate input estimates. Do not include the quantity of toll concentrates.

Line 27—Concentrate Price Forecast. Report for each year the estimated price to be paid per unit of concentrate purchased. Attach as part of Exhibit B an explanation of the method or methods used in projecting the price to be paid for purchased concentrates. Indicate the relationship between projected concentrate prices and the projected types and grades of concentrate purchased as developed on Line 26 above.

Line 28—Total Concentrate Cost. Enter the product of quantity and average per-unit price projections reported for each year on Lines 26 and 27.

Line 29—Concentrate Cost Adjustments. Report estimated adjustments to the cost of concentrates purchased. Attach as part of Exhibit B a description of any required cost adjustments and an explanation of the method used to estimate the amount of such adjustments.

Line 30—Net Cost of Concentrates Processed. Enter for each year the difference between amounts reported on Lines 28 and 29. Attach as part of Exhibit B an explanation of the differences, if any, between historical trends observed in the smelter's cost of concentrates processed (Schedule C.1) and the concentrate costs projected by this forecast.

Line 31—Projected Labor Quantity Requirements. Report for each year the estimated quantity of direct labor hours required to support the processing levels projected in the smelter's revenue forecasts. Attach as part of Exhibit B an explanation of the labor productivity factors considered in estimating the smelter's direct labor requirements.

Line 32—Projected Direct Labor Wage Rates. Report for each year the projected wage rate to be paid per unit of direct labor input. Attach as part of Exhibit B a description of direct labor cost factors under existing labor contracts and an explanation of the method or methods used to project direct labor costs upon the expiration of these contracts.

Line 33—Total Direct Labor Wage Payments. Enter for each year the product of Lines 31 and 32.

Line 34—Supplemental Employee Benefit Forecasts. Report adjustments required to direct labor costs for other employee compensation under supplemental benefit plans. Attach as part of Exhibit B a description of such plans and their costs and an explanation of the method or methods used to project such costs.

Line 35—Total Production Labor Cost. Enter for each year the total of Lines 33 and 34.

Lines 36, 39, 42, 45, and 48—Forecasted Energy Quantities. Report for each year the estimated quantity of energy by industrial type required to support the processing levels projected in the smelter's revenue forecasts. Attach as a part of Exhibit B, an explanation of energy use factors and qualities considered in estimating the smelters energy requirements.

Lines 37, 40, 43, 46, and 49—Forecasted Unit Price. Report for each year the projected price to be paid per unit of energy input by type of energy. Attach as a part of Exhibit B, a description of the energy price factors under existing energy contracts and an explanation of the method or methods used to project unit energy prices after expiration of these contracts.

Lines 38, 41, 44, 47, and 50—Total Payments. Enter the products of quantity and price forecasts for electricity (Lines 36×37), natural gas (Lines 39×40), coal (Lines 42×43), fuel oil (Lines 45×46), and other (Lines 48×49).

Line 51—Forecasted Energy Costs. Enter for each year the total of Lines 38, 41, 44, 47, and 50.

Base Sustaining Capital Investment Summary—Schedule D.2

The applicant should estimate and report, in Schedule D.2, yearly sustaining capital outlays for maintenance of the smelter's existing productive capability. These "base" case estimates should be forecast under the assumption that additional sulfur dioxide control facilities beyond those already in operation will not be required. Major elements of these outlays should be disclosed, as well as the total of such outlays. Estimates shall be restricted to those items which will be capitalized for tax purposes. These outlays shall primarily be for plant replacement, although outlays for improvements and expansion may be included to the extent that improvements and/or expansion, exclusive of required pollution control outlays, can be justified as economically feasible. Estimates of sustaining capital shall exclude any incremental investment for new interim pollution control requirements. Sustaining control investments in facilities shared with other operating segments shall be allocated in accordance with the instructions given below.

Estimates of sustaining capital shall be compatible with productive capacity and cost control requirements underlying the operating revenue and cost forecasts incorporated in Schedule D.1.

Lines 01 to 06—Sustaining Capital. Report by individual line item property, plant and equipment sustaining capital investments assignable to smelter operations for each fiscal year. Include both (1) property, plant and equipment directly associated with the smelter's operations and (2) facilities shared with other operating segments to the extent that a causal and beneficial relationship can be established for the intersegment allocation of such facility investments.

Attach as part of Exhibit B a schedule disclosing by individual line item the major elements of annual capital expenditures for sustaining capital. Further classify these annual capital expenditures into both (1) investments required to maintain the smelter versus investments in smelter expansion and improvements and (2) direct facility versus joint-use facility investments. Explain the method used for allocating capital expenditures on joint-use facilities to the smelter's operations.

Line 07—Total Smelter Sustaining Capital. Enter the total of amounts reported on Lines 01 through 06 for each respective fiscal year. Transfer the reported total for each respective year to Schedule A.1. Line 05.

"Controls" Case Pro-Forma Profit and Loss Summary—Schedule E.1

General

Report adjusted annual forecasts of operating revenues, operating costs and income taxes anticipated during calendar years 1979 through 1985 from operation of the smelter subject to this NSO application. These *"controls" case forecasts should be based on an assumption that the applicant implements in 1979 a program of additional pollution control facility investments sufficient to achieve full compliance* with the smelter's SIP emission limitations for sulfur dioxide.

The assumed investment program should be based on any adequately demonstrated process system and/or control technology

that would maximize the smelter's earnings subsequent to installation of the system(s). For this purpose, adequately demonstrated systems include, but are not limited to, the technology underlying EPA's new source performance standards for copper, lead and zinc smelters (40 CFR Part 60, Subparts P, Q and R) and the following control systems: Flakt-Boliden sodium citrate concentration, magnesium oxide concentration, lime-limestone scrubbing and Cominco ammonia scrubbing.

Copper smelters which will process concentrates containing an average of 1,000 pounds per hour or more of arsenic during the forecast period should assume that they will be required to use best engineering techniques to control fugitive emissions of arsenic. Copper smelters should also assume that they will be required to comply with arsenic control standards and measures promulgated by the Occupational Safety and Health Administration (OSHA). All smelters should assume that they will be required to install whatever technology is necessary to reduce their process and fugitive emissions of lead enough to achieve a concentration of 1.5 micrograms per cubic meter (mg/m³) on a 90-day average basis in the ambient air by January 1, 1985.

Report forecasted information required by each individual line item in a manner consistent with the instructions for Schedule D.1. Attach as part of Exhibit B supporting schedules describing and explaining the adjustments required to convert the "base" case forecasts in Schedule D.1 to the estimates reported in Schedule E.1. Transfer the amount reported for each year on Line 23 of this schedule to Schedule A.2, Line 01.

Constant Controls Sustaining Capital Investment Summary—Schedule E.2

The applicant should estimate and report yearly sustaining capital outlays for maintenance of the smelter's existing productive capability. These constant controls case estimates should be forecast under the assumption that full compliance with Agency air standards will be achieved. Major elements of these outlays should be disclosed, as well as the total of such outlays. Estimates shall be restricted to those items which will be capitalized for tax purposes. These outlays shall primarily be for plant replacement, although outlays for improvements and expansion may be included to the extent that improvements and/or expansion, exclusive of required pollution control outlays, can be justified as economically feasible. Estimates of sustaining capital shall exclude any incremental investment for new interim pollution control requirements. Sustaining control investments in facilities shared with other operating segments shall be allocated in accordance with the instructions given below.

Estimates of sustaining capital shall be compatible with productive capacity and cost control requirements underlying the operating revenue and cost forecasts incorporated in Schedule E.1.

Lines 01 to 06—Sustaining Capital. Report by individual line item property, plant and equipment sustaining capital investments assignable to smelter operations for each fiscal year. Include both (1) property, plant and equipment directly assoicated with the smelter's operations and (2) facilities shared with other operating segments to the extent that a causal and beneficial relationship can be established for the intersegment allocation of such facility investments.

Attach as part of Exhibit B a schedule disclosing by individual line item the major elements of annual capital expenditures for sustaining capital. Further classify these annual capital expenditures into both (1) investments required to maintain the smelter versus investments in smelter expansion and improvements and (2) direct facility versus joint-use facility investments. Explain the method used for allocating capital expenditures on joint-use facilities to the smelter's operations.

Line 07—Total Smelter Sustaining Capital. Enter the total of amounts reported on Lines 01 through 06 for each fiscal year. Transfer the reported total for each year to Schedule A.2, Line 03.

"Interim Controls" Case Pro-Forma Profit and Loss Summary—Schedule F.1

General

Report adjusted annual forecasts of operating revenues, operating costs and income taxes for the years 1979 through 1985 from operation of the smelter, subject to this controls waiver application. These "interim controls" *case forecasts should be based on an assumption that the applicant implements in 1979 a program of interim controls.*

The assumed investment program should be based on the installation and operation of a well-designed sulfuric acid plant to treat all strong gas streams. The "interim controls" projection may, but need not, account for lead and arsenic controls on the same basis as for other applicants. If those controls are taken into account, however, it should be assumed that the SO_2 controls are also in an "interim controls" configuration.

Report forecasted information required by each individual line item in a manner consistent with the instructions for Schedule D.1. Attach as part of Exhibit B supporting schedules describing and explaining the adjustments required to convert the "base" case forecasts in Schedule D.1 to the estimates reported in Schedule F.1. Transfer the appropriate amounts reported for each year from this Schedule to Schedule A.3, Lines 01 and 02.

Interim Controls Sustaining Capital Investment Summary—Schedule F.2

The applicant should estimate and report, in Schedule F.2, yearly sustaining capital outlays for maintenance of the smelter's existing productive capability. Major elements of these outlays should be disclosed, as well as the total of such outlays. Estimates shall be restricted to those items which will be capitalized for tax purposes. These outlays shall primarily be for plant replacement, although outlays for improvements and expansion may be included to the extent that improvement and/or expansion, exclusive of required pollution control outlays, can be justified as economically feasible. Estimates of sustaining capital shall exclude any incremental investment for new interim pollution control requirements. Sustaining control investments in facilities shared with other operating segments shall be allocated in accordance with the instructions given below.

Estimates of sustaining capital shall be compatible with productive capacity and cost control requirements underlying the operating revenue and cost forecasts incorporated in Schedule F.1.

Lines 01 to 06—Sustaining Capital. Report by individual line item property, plant and equipment sustaining capital investments assignable to smelter operations for each fiscal year. Include both (1) property, plant and equipment directly associated with the smelter's operations and (2) facilities shared with other operating segments to the extent that a causal and beneficial relationship can be established for the intersegment allocation of such facility investments.

Attach as part of Exhibit B a schedule disclosing by individual line item the major elements of annual capital expenditures for sustaining capital. Further classify these annual capital expenditures into both (1) investments required to maintain the smelter versus investments in smelter expansion and improvements and (2) direct facility versus joint-use facility investments. Explain the method used for allocating capital expenditures on joint-use facilities to the smelter's operations.

Line 07—Total Smelter Sustaining Capital. Enter the total of the amounts reported on Lines 01 through 06 for each fiscal year. Transfer the reported total for each year to Schedule A.3, Line 07.

[6560-01-C]

EPA - _____

Environmental Protection Agency

Primary Nonferrous Smelter Order Application

Part I - IDENTIFICATION INFORMATION

1. Firm Name _____
2. Street/Box/RFD _____
3. City _____
4. State _____
5. Zip Code _____
6. IRS Employer Identification No. _____
7. SEC 1934 Act Registration Number _____
8. Smelter Iden. _____
9. Street/Box/RFD _____
10. City _____
11. State _____
12. Zip Code _____
13. Contact Person _____
14. Title _____
15. Street/Box/RFD _____
16. Telephone _____ - _____ - _____
17. City _____
18. State _____
19. Zip Code _____

Part II - CERTIFICATION

I certify that the information provided herein and appended hereto is true and accurate to the best of my knowledge.

Name _____

Signature _____ Title _____

Date _____

TITLE 18 USC 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.

Base Case Forecast Summary

_____
(Smelter Identification)

Schedule A.1

Page 1 of 1

		1979	1980	1981	1982	1983	1984	1985	Total
A.									
Operating Cash Flow Projection:									
1. Net Income from Operations	01								XXXXX
2. Depreciation & Amortization									
a. Pollution control facilities	02								XXXXX
b. Other smelter facilities	03								XXXXX
3. Operating cash flow	04								XXXXX
4. Capital Expenditure Projections	05								XXXXX
5. Net Cash Flow Projections	06								XXXXX
6. Discount Factors	07								XXXXX
7. Present Value of Future Cash Flow	08								XXXXX
B.									
Net Present Value									
1. Terminal Value	09								
2. Discount Factor	10								
3. Present Value of Terminal Salvage Value	11								
4. Present Value of Future Cash Flows	12								
5. Total Present Value	13								
6. Current Salvage Value	14								
7. Net Present Value	15								

Constant Controls Case Forecast Summary

(Smelter Identification)

Schedule A.2

A. Operating Cash Flow Projection:		1979	1980	1981	1982	1983	1984	1985	Total
1. Net Income from Operation	01								
2. Capital Expenditure Projections									XXXXX
a. Constant Controls	02								
b. Sustaining capital	03								XXXXX
c. Total	04								XXXXX
3. Adjusted Cash Flow Projections	05								XXXXX
4. Discount Factors	06								XXXXX
5. Present Value of Future Cash Flows	07								XXXXX
									XXXXX

B. Net Present Value		
1. Terminal Value	08	
2. Discount Factor	09	
3. Present Value of Terminal Salvage Value	10	
4. Present Value of Future Adjusted Cash Flows	11	
5. Total Present Value	12	
6. Current Salvage Value	13	
7. Net Present Value	14	

Interim Control Case Forecast Summary

(Smelter Identification)

Schedule A.3

		1979	1980	1981	1982	1983	1984	1985	Total
A. Gross Operating Profit	01								XXXXX
B. Operating Cash Flow Projection:									
1. Net Income from Operations	02								XXXXX
2. Depreciation & Amortization									
a. Pollution control facilities	03								XXXXX
b. Other smelter facilities	04								XXXXX
3. Operating cash flow	05								XXXXX
4. Capital Expenditure Projections									
a. Interim controls	06								XXXXX
b. Sustaining capital	07								XXXXX
c. Total	08								XXXXX
5. Net Cash Flow Projections	09								XXXXX
6. Discount Factors	10								XXXXX
7 Present Value of Future Cash Flow	11								XXXXX
C. Net Present Value									
1. Terminal Value	12								
2. Discount Factor	13								
3. Present Value of Terminal Salvage Value	14								
4. Present Value of Future Cash Flows	15								
5. Total Present Value	16								
6 Current Salvage Value	17								
7. Net Present Value	18								

Nonferrous Metals Operations
Consolidated Profit and Loss Summary
For the Year Ended: _____

Schedule B.1

_____
(Smelter Identification)

		Consolidated (a)	Eliminations (b)	Non-traceable (c)	Mining (d)	Concentrator (e)	Smelter (f)	Refinery (g)	Other Non-ferrous (h)
A. Operating Revenues	01	$	$	$	$	$	$	$	$
B. Operating Expenses									
1. Cost of sales	02	$	$	$	$	$	$	$	$
2. Selling, general & administrative	03								
3. Taxes, other than income tax	04								
4. Exploration & research costs	05								
5. Depreciation, depletion & amort.									
a. Pollution control facilities	06								
b. Other operating facilities	07								
6. Other operating expenses	08								
7. Total operating expenses	09	$	$	$	$	$	$	$	$
C. Income from Operations	10	$	$	$	$	$	$	$	$
D. Other Income & (Expense)									
1. Income from unconsol. affiliates	11	$	$XXXXXX	$	$XXXXXX	$XXXXXX	$XXXXXX	$XXXXXX	$
2. Other dividend & interest income	12		XXXXXX		XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
3. Gain/(loss) from disp. of property	13								
4. Interest expense & financial charges									
a. Short-term debt	14				XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
b. Other debt financing	15		XXXXXX						
5. Misc. income & (expense)	16								
6. Total other income & (expense)	17	$	$	$	$	$	$	$	$
E. Net Taxable Income	18	$	$	$	$	$	$	$	$

PROPOSED RULES

6323

Nonferrous Metals Operations
Consolidated Capital Investment Summary

_____
(Smelter Identification)

Schedule B.2

Page 1 of 1

		Consolidated (a)	Eliminations (b)	Non-traceable (c)	Mining (d)	Concentrator (e)	Smelter (f)	Refinery (g)	Other Nonferrous (h)
A. Current Assets									
1. Cash on hand & deposit	01	$	$	$	$	$	$	$	$
2. Temporary cash investments	02								
3. Trade receivables, net									
a. Unaffiliated customers	03								
b. Affiliated customers	04								
4. Inventories									
a. Raw materials & products	05								
b. Other materials & supplies	06								
5. Other current assets	07								
6. Total current assets	08	$	$	$	$	$	$	$	$
B. Property, Plant & Equipment									
1. Gross facility investment	09		$	$	$	$	$	$	$
2. Accum. Deprec., Depl. & Amort.	10								
3. Net facility investment	11	$	$	$	$	$	$	$	$
C. Other Non-Current Assets									
1. Invest. in unconsol. subsid.	12	$	$XXXXXX	$XXXXXX	$XXXXXX	$XXXXXX	$XXXXXX	$XXXXXX	$
2. Other investments & advances	13		XXXXXX		XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
3. Misc. non-current assets	14								
4. Total other non-current assets	15	$	$	$	$	$	$	$	$
D. Total Asset Investment	16	$	$	$	$	$	$	$	$
E. Current Liabilities									
1. Trade accounts & notes payable									
a. Unaffiliated suppliers	17	$	$	$	$	$	$	$	$
B. Affiliated supplies	18								
2. Other expense accruals	19								
3. Notes payable, current	20								
4. Other current liabilities	21								
5. Total current liabilities	22	$	$	$	$	$	$	$	$
F. Net Capital Investment	23	$	$	$	$	$	$	$	$

Historical Profit and Loss Summary

(Smelter Identification)

Schedule C.1

		1974	1975	1976	1977	1978
A. Operating Revenues						
1. Primary metal sales	01	$	$	$	$	$
2. Co-product & by-product sales	02					
3. Tolling service revenues	03					
4. Other operating revenues	04					
5. Total operating revenues	05	$	$	$	$	$
B. Cost of Sales						
1. Concentrates processed	06	$	$	$	$	$
2. Other materials	07					
3. Production labor	08					
4. Pollution control expense	09					
5. Other production costs	10					
6. Total cost of sales	11	$	$	$	$	$
C. Gross Operating Profit	12	$	$	$	$	$
D. Other Operating Expenses						
1. Selling, general & administrative	13	$	$	$	$	$
2. Taxes, other than income tax	14					
3. Exploration & research costs	15					
4. Depreciation & amortization						
a. Pollution control facilities	16					
b. Other smelter facilities	17					
5. Misc. operating expenses	18					
6. Total other operating expenses	19	$	$	$	$	$
E. Income from Operations	20	$	$	$	$	$
F. Other Income & (Expense)						
1. Gain/(loss) on disposition of property	21	$	$	$	$	$
2. Interest on short-term debt financing	22					
3. Misc. other income & (expense)	23					
4. Total other income & (expense)	24	$	$	$	$	$
G. Net Taxable Income	25	$	$	$	$	$

Schedule C.1.a

Supplemental Smelter Revenue Data

(Segment Identification)

		1974	1975	1976	1977	1978
A. Copper Product Sales						
1. Total Quantity Sold	01					
2. Unaffiliated Customer Sales						
a. Quantity sold	02					
b. Operating revenue	03					
c. Average unit price	04					
d. Ave. product grade	05					
3. Affiliated Customer Sales						
a. Quantity sold	06					
b. Operating revenue	07					
c. Average unit price	08					
d. Ave. product grade	09					
4. Adjusted Copper Revenues						
a. Total copper revenues	10					
b. Transfer price adjustment	11					
c. Other revenue adjustments	12					
d. Adjusted copper revenues	13					
B. Lead Product Sales						
1. Total Quantity Sold	14					
2. Unaffiliated Customer Sales						
a. Quantity sold	15					
b. Operating revenue	16					
c. Average unit price	17					
d. Ave. product grade	18					
3. Affiliated Customer Sales						
a. Quantity sold	19					
b. Operating revenue	20					
c. Average unit price	21					
d. Ave. product grade	22					
4. Adjusted Lead Revenues						
a. Total lead revenues	23					
b. Transfer price adjustment	24					
c. Other revenue adjustments	25					
d. Adjusted lead revenues	26					

Supplemental Smelter Revenue Data

(Smelter Identification)

Schedule C.1.a

		1974	1975	1976	1977	1978
C. Zinc Product Sales						
1. Total Quantity Sold	27					
2. Unaffiliated Customer Sales						
a. Quantity sold	28					
b. Operating revenue	29					
c. Average unit price	30					
d. Ave. product grade	31					
3. Affiliated Customer Sales						
a. Quantity sold	32					
b. Operating revenue	33					
c. Average unit price	34					
d. Ave. product grade	35					
4. Adjusted Zinc Revenue						
a. Total zinc revenues	36					
b. Transfer price adjustment	37					
c. Other revenue adjustments	38					
d. Adjusted Zinc revenues	39					
D. Primary Metal Revenues	40					
E. Tolling Service Revenues						
1. Total Toll Concentrates Processed	41					
2. Unaffiliated Customer Revenues						
a. Concentrates processed	42					
b. Operating revenue	43					
c. Average unit price	44					
d. Ave. product grade	45					
3. Affiliated Customer Revenues						
a. Concentrates processed	46					
b. Operating revenue	47					
c. Average unit price	48					
d. Ave. product grade	49					
4. Adjusted Tolling Service Revenues						
a. Total tolling service revenue	50					
b. Transfer price adjustment	51					
c. Other revenue adjustments	52					
d. Adjusted tolling service revenues	53					

Historical Capital Investment Summary

(Smelter Identification)

Schedule C.2

		1974	1975	1976	1977	1978
A. Current Assets						
1. Cash on hand & deposit	01	$	$	$	$	$
2. Temporary cash investments	02					
3. Trade receivables, net						
a. Unaffiliated customers	03					
b. Affiliated Customers	04					
4. Inventories						
a. Raw materials & products	05					
b. Other materials & supplies	06					
5. Other current assets	07					
6. Total current assets	08	$	$	$	$	$
B. Property, Plant & Equipment						
1. Land	09	$	$	$	$	$
2. Buildings & improvements	10					
3. Machinery & equipment	11					
4. Transporation equipment	12					
5. Pollution control facilities	13					
6. Other fixed assets	14					
7. Total smelter investment	15	$	$	$	$	$
8. Less: Accum. depreciation & amort.	16					
9. Net smelter investment	17	$	$	$	$	$
C. Other Non-Current Assets	18	$	$	$	$	$
D. Total Smelter Capital Investment	19	$	$	$	$	$
E. Current Liabilities						
1. Trade accounts & notes payable						
a. Unaffiliated suppliers	20	$	$	$	$	$
b. Affiliated suppliers	21					
2. Other expense accruals	22					
3. Notes payable, current	23					
4. Other current liabilities	24					
5. Total current liabilities	25	$	$	$	$	$
G. Net Smelter Capital Investment	26	$	$	$	$	$

Schedule C.2.a

Cash Proceeds from Liquidation

(Smelter Identification)

Page 1 of 1

		(1) Estimated liquidation value	(2) Reported net book value	(3) Total Gain (loss)	(4) Gain (loss) subject to taxation as: Ordinary income	(5) Gain (loss) subject to taxation as: Capital gain
A. Total Current Assets	01	$_____	$_____	$ XXXXX	$ XXXXX	$ XXXXX
B. Property, Plant & Equipment						
1. Land	02	$_____	$_____	$_____	$_____	$_____
2. Buildings & improvements	03	_____	_____	_____	_____	_____
3. Machinery & equipment	04	_____	_____	_____	_____	_____
4. Transportation equipment	05	_____	_____	_____	_____	_____
5. Pollution control facilities	06	_____	_____	_____	_____	_____
6. Other fixed assets	07	_____	_____	_____	_____	_____
7. Total	08	_____	_____	_____	_____	_____
C. Other Non-Current Assets	09	$_____	$_____	$_____	$_____	$_____
D. Total Smelter Value	10	$_____	$_____	$_____	$_____	$_____
E. Total Current Liabilities	11	$_____	$_____	$ XXXXX	$ XXXXX	$ XXXXX
F. Gross liquidation value	12	$_____	$_____	$_____	$_____	$_____
G. Liquidation Costs	13	$_____	$ XXXXX	$_____	$_____	$ XXXXX
H. Net Taxable Gain (or loss)	14	$ XXXXX	$ XXXXX	$ XXXXX	$_____	$_____
I. Income Tax Rate	15	$ XXXXX	$ XXXXX	$ XXXXX	$_____	$_____
J. Income Tax on Gain (loss)	16	$_____	$ XXXXX	$ XXXXX	$_____	$_____
K. After Tax Cash Proceeds from Liquidation	17	$_____	$ XXXXX	$ XXXXX	$ XXXXX	$ XXXXX

Schedule D.1.a

Supplemental Revenue and Cost Forecast Information

(Smelter Identification)

		1979	1980	1981	1982	1983	1984	1985
A. Primary Metal Revenue Forecasts								
1. Pro-forma copper revenues								
a. Forecasted unit sales	01	____	____	____	____	____	____	____
b. Forecasted price per unit	02	____	____	____	____	____	____	____
c. Total copper revenues	03	$____	$____	$____	$____	$____	$____	$____
d. Revenue adjustments	04	____	____	____	____	____	____	____
e. Net copper revenues	05	$____	$____	$____	$____	$____	$____	$____
2. Pro-forma zinc revenues								
a. Forecasted unit sales	06	____	____	____	____	____	____	____
b. Forecasted price per unit	07	____	____	____	____	____	____	____
c. Total zinc revenues	08	$____	$____	$____	$____	$____	$____	$____
d. Revenue adjustments	09	____	____	____	____	____	____	____
e. Net zinc revenues	10	$____	$____	$____	$____	$____	$____	$____
3. Pro-forma lead revenues								
a. Forecasted unit sales	11	____	____	____	____	____	____	____
b. Forecasted price per unit	12	____	____	____	____	____	____	____
c. Total lead revenues	13	$____	$____	$____	$____	$____	$____	$____
d. Revenue adjustments	14	____	____	____	____	____	____	____
e. Net lead revenues	15	$____	$____	$____	$____	$____	$____	$____
4. Pro-forma primary metal revenues	16	$____	$____	$____	$____	$____	$____	$____
B. Co-Product & By-Product Revenue Forecasts								
1. Forecasted co-product revenues	17	$____	$____	$____	$____	$____	$____	$____
2. Forecasted by-product revenue from:								
a. Pollution control facilities	18	____	____	____	____	____	____	____
b. Other smelter processing	19	____	____	____	____	____	____	____
3. Total pro-forma revenues	20	$____	$____	$____	$____	$____	$____	$____

Supplemental Revenue and Cost Forecast Information

Schedule D.1.a

(Smelter Identification)

		1979	1980	1981	1982	1983	1984	1985
C. Tolling Service Revenue Forecasts								
1. Forecasted quantity of concentrates	21	____	____	____	____	____	____	____
2. Forecasted price per unit processed	22	____	____	____	____	____	____	____
3. Total tolling service revenues	23	$____	$____	$____	$____	$____	$____	$____
4. Revenue adjustments	24	____	____	____	____	____	____	____
5. Net tolling service revenues	25	$____	$____	$____	$____	$____	$____	$____
D. Concentrate Cost Forecasts								
1. Quantity of concentrate processed	26	____	____	____	____	____	____	____
2. Forecasted price per unit purchased	27	____	____	____	____	____	____	____
3. Total concentrate costs	28	$____	$____	$____	$____	$____	$____	$____
4. Concentrate cost adjustments	29	____	____	____	____	____	____	____
5. Net cost of concentrate processed	30	$____	$____	$____	$____	$____	$____	$____
E. Production Labor Cost Forecasts								
1. Forecasted direct labor hours	31	____	____	____	____	____	____	____
2. Forecasted hourly wage rate	32	____	____	____	____	____	____	____
3. Total wage payments	33	$____	$____	$____	$____	$____	$____	$____
4. Supplemental employee benefits	34	____	____	____	____	____	____	____
5. Total production labor cost	35	$____	$____	$____	$____	$____	$____	$____

Supplemental Revenue and Cost Forecast Information

Schedule D.1.a

(Smelter Identification)

		1979	1980	1981	1982	1983	1984	1985
F. Energy Cost Forecasts								
1. Electricity								
a. Forecasted quality kilowatt hours	36	____	____	____	____	____	____	____
b. Forecasted price per kwh	37	____	____	____	____	____	____	____
c. Total electricity payments	38	$____	$____	$____	$____	$____	$____	$____
2. Natural gas								
a. Forecasted quantity in mcf	39	____	____	____	____	____	____	____
b. Forecasted price per mcf	40	____	____	____	____	____	____	____
c. Total natural gas payments	41	$____	$____	$____	$____	$____	$____	$____
3. Coal								
a. Forecasted quantity per tons	42	____	____	____	____	____	____	____
b. Forecasted price per ton	43	____	____	____	____	____	____	____
c. Total coal payments	44	$____	$____	$____	$____	$____	$____	$____
4. Fuel Oil								
a. Forecasted quantity in gallons	45	____	____	____	____	____	____	____
b. Forecasted price per gallon	46	____	____	____	____	____	____	____
c. Total fuel oil payments	47	$____	$____	$____	$____	$____	$____	$____
5. Other (specify)								
a. Forecasted quantity (specific units)	48	____	____	____	____	____	____	____
b. Forecasted price per unit	49	____	____	____	____	____	____	____
c. Total payments	50	$____	$____	$____	$____	$____	$____	$____
6. Forecasted energy costs	51	$____	$____	$____	$____	$____	$____	$____

Schedule D.2

Base Sustaining Capital Investment Summary

(Smelter Identification)

Sustaining Capital		1979	1980	1981	1982	1983	1984	1985
1. Land	01	$	$	$	$	$	$	$
2. Buildings & improvements	02							
3. Machinery & equipment	03							
4. Transportation equipment	04							
5. Pollution control facilities	05							
6. Other fixed assets	06							
7. Total smelter sustaining capital	07	$	$	$	$	$	$	$

Schedule E.1

Constant Controls Pro-Forma Profit and Loss Summary

(Smelter Identification)

		1979	1980	1981	1982	1983	1984	1985
A. Operating Revenues								
1. Primary metal sales	01	$	$	$	$	$	$	$
2. Co-product & by-product sales	02							
3. Tolling service revenues	03							
4. Other operating revenues	04							
5. Total operating revenues	05	$	$	$	$	$	$	$
B. Cost of Sales								
1. Concentrates	06	$	$	$	$	$	$	$
2. Other materials	07							
3. Production labor	08							
4. Production overhead	09							
5. Pollution control costs	10							
6. Total cost of sales	11	$	$	$	$	$	$	$
C. Gross Operating Profit	12	$	$	$	$	$	$	$
D. Other Operating Expenses								
1. Selling, general & administrative	13	$	$	$	$	$	$	$
2. Taxes, other than income	14							
3. Exploration & research costs	15							
4. Depreciation & amortization								
a. Pollution control facilities	16							
b. Other smelter facilities	17							
5. Interest on short-term debt	18							
6. Misc. operating expenses	19							
7. Total other operating expenses	20	$	$	$	$	$	$	$
E. Income from Operations	21	$	$	$	$	$	$	$
F. Income Taxes	22	$	$	$	$	$	$	$
G. Net Income from Operations	23	$	$	$	$	$	$	$

Schedule E.2

Constant Controls Sustaining Capital Investment Summary

(Smelter Identification)

		1979	1980	1981	1982	1983	1984	1985
Sustaining Capital								
1. Land	01	$	$	$	$	$	$	$
2. Buildings & improvements	02							
3. Machinery & equipment	03							
4. Transportation equipment	04							
5. Pollution control facilities	05							
6. Other fixed assets	06							
7. Total smelter sustaining capital	07	$	$	$	$	$	$	$

Schedule F.1

Interim Controls Pro-Forma Profit and Loss Summary

(Smelter Identification)

		1979	1980	1981	1982	1983	1984	1985
A. Operating Revenues								
1. Primary metal sales	01	$	$	$	$	$	$	$
2. Co-product & by-product sales	02							
3. Tolling service revenues	03							
4. Other operating revenues	04							
5. Total operating revenues	05	$	$	$	$	$	$	$
B. Cost of Sales								
1. Concentrates	06	$	$	$	$	$	$	$
2. Other materials	07							
3. Production labor	08							
4. Production overhead	09							
5. Pollution control costs	10							
6. Total cost of sales	11	$	$	$	$	$	$	$
C. Gross Operating Profit	12	$	$	$	$	$	$	$
D. Other Operating Expenses								
1. Selling, general & administrative	13	$	$	$	$	$	$	$
2. Taxes, other than income tax	14							
3. Exploration & research costs	15							
4. Depreciation & amortization								
a. Pollution control facilities	16							
b. Other smelter facilities	17							
5. Interest on short-term debt	18							
6. Misc. operating expenses	19							
7. Total other operating expenses	20	$	$	$	$	$	$	$
E. Income from Operations	21	$	$	$	$	$	$	$
F. Income Taxes	22	$	$	$	$	$	$	$
G. Net Income from Operations	23	$	$	$	$	$	$	$

Schedule F.2

Interim Controls Sustaining Capital Investment Summary

(Smelter Identification)

		1979	1980	1981	1982	1983	1984	1985
Sustaining Capital								
1. Land	01	$____	$____	$____	$____	$____	$____	$____
2. Buildings & improvements	02	____	____	____	____	____	____	____
3. Machinery & equipment	03	____	____	____	____	____	____	____
4. Transportation equipment	04	____	____	____	____	____	____	____
5. Pollution control facilities	05	____	____	____	____	____	____	____
6. Other fixed assets	06	____	____	____	____	____	____	____
7. Total smelter sustaining capital	07	$____	$____	$____	$____	$____	$____	$____

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